Article

Green drivers of hotel sustainability: Top management and HR empowering employees for environmental performance

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Abstract

Hotel industry has been identified as one of the vital sectors that can have a major contribution to the achievement of sustainable development. With increasing environmental awareness, hotels are taking the initiative to offer greener products and services. The importance of hotel environmental performance has been acknowledged by scholars. However, the factors that drive hotel environmental performance have not been thoroughly investigated. To address this gap, and drawing on the resource-based view perspective, this study investigated the impact of top management green commitment and green human resource management on green employee empowerment and, in turn, its impact on hotel environmental performance. The mediating role of green employee empowerment was also examined. To collect data from 60 hotel employees in Iran, a longitudinal study using an online survey was employed. The findings suggest that top management green commitment and green human resource management had a direct impact on green employee empowerment and hotel environmental performance. The results also support the mediated relationships. The theoretical and practical implications are discussed. The limitations and areas of future research are outlined.

Keywords top management green commitment; green human resource management; green employee empowerment; environmental performance; hospitality industry; Iran.

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1 Introduction

Iran is located in south-west Asia and covers an area of 1.64 million square kilometers. Situated on the world dry belt, 60 percent of Iran is covered with mountains and the remaining part is desert and arid lands (National Report of the Islamic Republic of Iran on Disaster Reduction, 2005). Due to its location, Iran has a high level of exposure to multiple disaster risks. Major natural disasters include frequent serious earthquakes, floods,

droughts, landslides, desertification, deforestation, forest fires and sand and dust storms increasingly affect different parts of the country (Bakhtiari, 2014; National Report of the Islamic Republic of Iran on Disaster Reduction, 2005). Iran suffers similarly from inappropriate and indiscriminate exploitation of limited natural resources in the form of human activities in many fields, including in the hospitality industry, which causes environmental destruction and causes various types of pollution (Rezaeinejad and Khaniwadekar, 2021).

Due to its diverse tourist attractions in various provinces such as waterfalls, straits, rivers, mountains, temperate climate, and thousands of floras and aquatic plants, Iran has been endorsed as a possible destination for both domestic and international tourists (Esfandyari et al., 2023; Rezaeinejad and Khaniwadekar, 2021; Hamedi, 2010). Tourism has caused permanent damage to the Iranian environment by tourism so far, including the overuse of resources due to lack of comprehensive national plan and monitoring for tourism development, pollution due to lack of measures to manage the generation of new or increased waste residues, insufficiency the carrying capacity of sewage disposal systems in accordance with tourism growth and increased number of hotels and services, air pollution, noise pollution, overcrowding, traffic (Rezaeinejad and Khaniwadekar, 2021; Hamedi, 2010).

To tackle environmental issues, sustainable tourism should be ecologically harmless, economically appropriate, and socially satisfactory (Rezaeinejad and Khaniwadekar, 2021). Sustainable tourism aims to meet the needs of current tourists and host communities while preserving and increasing opportunities for future generations. It pursues to find promising ways to enhance tourists' well-being and ensure long-term sustainability. Sustainable development represents the most appropriate approach to tourism development (Esfandyari et al., 2023). This approach highlights the integration of environmental and socio-economic factors within a community for both today and future generations (Pezashki et al., 2023; Esfandyari et al., 2023). Given the proven ability of tourism to alleviate poverty, the Iranian government has recently given more weight to tourism development. Of course, it would be hard to overcome the wide variety of issues—such as conflict, political turmoil, international sanctions, and economic crises — that hinder the country's tourism industry (Hateftabar, 2021).

Currently, industries and organizations are gradually face with dynamic and changing environment (Nikmanesh and Ooshaksaraie, 2016). Since the hospitality industry contributes directly to environmental concerns regarding water, energy, and waste, the conservation of the environment has continued a critical issue in the hospitality industry. Driven meaningfully by worldwide consumer awareness, the hospitality industry has started to integrate green strategies into their design, construction, and daily operations (Haldorai et al., 2022). Going green is an unavoidable approach for the hospitality industry. For example, a hotel that is environmentally-friendly and has accepted energy conservation measures is called a green hotel (Alizadeh et al., 2023). Green hotel practices are considered to be one of the environmentally friendly initiatives that aim to eliminate the negative effect on the environment by saving energy, reducing water consumption, and waste management and reduction (Abdou et al., 2020). The managers in green hotels are interested in participating in programs to save water, energy, and reduce solid waste in order to protect the planet (Alizadeh et al., 2023).

In Iran, tourism can be related to not only sustainable development and but also environmental conservation. There is a general positive attitude in regard to how the residents' local districts are influenced environmentally by tourism (Wu et al., 2023). Iran, like many other countries in the world, suffers from inappropriate use of natural resources and non-use of clean energy and increasing types of pollution. These changes have required a review of production plans and consumption patterns. In this regard, the production and use of green products instead of conventional products is one of the ways to preserve and improve the environment for future generations. Therefore, in Iran, the tendency towards green hotels practices is forming. It seems that the hospitality industry should have high motivation for going green, which can include a sense

of social responsibility, government regulations, and economic benefits (Alizadeh et al., 2023). To improve environmental performance, it should be provided green products, adopt waste reduction and management policies, and use water recycling, start greening human resources management practices. This is vital because finally all organizational members are responsible for enacting green policies (Haldorai et al., 2022).

The ability of an organization to drastically cut on solid waste, hazardous and toxic materials consumption, and air emissions, effluent waste, and other wastes is mentioned to as Environmental Performance (EP) (Wahyuni et al., 2023). EP refers to organizational operations that effort to meet and surpass society's expectations for the natural environment, rather than just following the regulations. It addresses the environmental effect of organizational production processes as well as the use of resource in a way that best meets the requirements of the legal environment. Research shows that EP is related to the quality of environmentally friendly products (Alam et al., 2021). The EP of an organization is measured by a series of metrics such as pollution reduction, recycling efforts, and waste minimization. Approximately all industries have lately accepted environmental management practices and have demonstrated increased efficiency through effective waste handling and the responsive disposal of hazardous materials (Haldorai et al., 2022). These environmental initiatives and systems necessitate the cooperation of the human resource management department. When an organization's pro-environmental goals and human resources management practices are effectively matched, organization's achievement is ensured in reaching environmental performance (Alam et al., 2021).

To achieve a higher level of EP, organizations must also leverage human resources to embrace green objectives, thereby relating EP and human resources management (Haldorai et al., 2022). Green Human Resources Management (GHRM) occurs when an organization's environmental goals and human resources objectives are inline. The main objectives of GHRM are to decrease the negative effects the organization produces on environment and to improve environmental awareness among the organization's employees (Wahyuni et al., 2023). Employees' environmental awareness plays avital role in green revolution. Frequently communicating environmental information to employees persuades them to be more involved and, in the same way, increases their environmental awareness (Abdou et al., 2020). Since GHRM is a characteristic that can be used to gain a better understanding of the relationship between organizational activities and their environmental consequences. Green performance improvement is possible utilizing GHRM (Wahyuni et al., 2023). GHRM features can be used to promote individuals' environmentally conscious conduct. Human resource managers are in responsibility of mobilizing their employee in support of environmental protection initiatives. Managing human resources is crucial throughout the entire environmental management system (Aggarwal et al., 2023). Researchers have confirmed the significance of GHRM practices in fostering a sustainable workplace (Aggarwal et al., 2023).

It is commonly known that support for environmental issues from the top management leads to positive perception of green practices among employees, which in turn results in sustainable EP. Due to senior executives' positional influence within the organization hierarchy, the top management team is arguably one of the organization's most valuable resources, as are the likely implications resulting from their commitment to specific goals. Top management green commitment (TMGC) refers to the degree to which an organization's senior members are regarded as stewards of the natural environment (Haldorai et al., 2022). Commitment can be observed as an attitudinal factor which promotes an individual's participation in steady relationships with other community members since it is valuable and productive, according to their way of thinking (Wu et al., 2023).

Likewise, a good employee is vital to achieving organization goals and also being capable of dealing with change and competition. The ability of employees to solve almost any issue in sustainability tasks has the

highest correlation with the organization's EP (Wahyuni et al., 2023). Employee empowerment refers to the extent of employees' ability to perform their functions accurately (Ooshaksaraie, 2009). Employee empowerment is a motivational strategy that assist employees become more involved and makes decisions. It stresses on trust, inspiration, decision making and removing barriers between employees and top managers. Green Employee Empowerment (GEE) is the leading GHRM practice to accomplish green organizational goals. GHRM practices strengthen the empowerment of employees by increasing skills, knowledge and incentive to organization's EP (Alam et al., 2021). Organizations that emphasize on the greening of human resources operations are more successful, leading to EP. Despite this, organizations EP may suffer if its employees aren't active in greening (Aggarwal et al., 2023). To improve EP, talented eco-friendly employees who have a full awareness of eco-friendly human resources can be attracted and kept (Aggarwal et al., 2023).

This study considers TMGC and GHRM as two vital factors which lead to EP through GEE in the Hospitality Industry in Iran. Also, this study focuses on the perspective of the Resource-Based View (RBV). The RBV theory assumes that organizations should develop and effectively integrate unique bundles of strategic resources to achieve higher performance (Haldorai et al., 2022). Therefore, this study considers how TMGC and GHRM can affect EP. Besides, to achieve a higher level of EP, organizations must also power employees to embrace green objectives, thus relating EP and GEE. Moreover, this study examines the straight role of TMGC and GHRM on GEE and EP. This study also examines the mediating role of GEE on EP. Furthermore, this study examines the straight role of GEE on EP.

2 Green Hospitality Industry

2.1 Pollution prevention

The U.S. Environmental Protection Agency (EPA) partnership programs aim to encourage sustainability within the hospitality industry. These programs outline the economic and environmental advantages of "going green", showing how hospitality establishments can improve effectiveness, meet customer demand for eco-friendly facilities, and minimize environmental impact. The programs offer detailed guidance on waste management, green cleaning, energy management, and water efficiency (EPA, 2009). Hence, the hospitality industry can find that "going green" saves money and prevents pollution. Pollution Prevention is source reduction and other practices that reduce or eliminate the creation of pollutants (DEP, 1995).

2.2 Hospitality factsheet

Hospitality fact sheet provides information on pollution prevention and energy efficiency opportunities for the hospitality industry (Fig. 1) (DEP, 1995).

2.3 Water conservation

Clean water is vital resource for the hospitality sector, used continuously for various purposes including taps, showers, cooking, cleaning, laundry, toilets and heating. Water can be an expensive resource if not managed correctly; then, it is vital financially to conserve water to ensure quality services are provided (EPA, 2021d).

2.4 Food waste management

Food waste in the hospitality sector represents a significant, often unseen, cost. Reducing food waste benefits profitability by lowering operating costs, decreasing waste charges, and saving on food purchases. While some food waste is inevitable, it has been found that hospitality sectors' average food waste bins contain as much as two-thirds avoidable or potentially edible food. Better waste segregation will reduce waste costs (Fig. 2) (EPA, 2021b).

2.5 Waste management

Waste collection is expensive that represents a valuable resources and supplies waste were paid for in the first place. Hospitality can minimize costs by preventing waste and properly segregating bin waste. EPA research

shows that about 80% of general waste generated in the hospitality sector can be diverted into other bins. Waste disposal costs vary depending on the bin waste. Waste hierarchy is demonstrated in Fig. 3 that including waste prevention, reuse, recycle, and disposal as the last resort (EPA, 2021c).

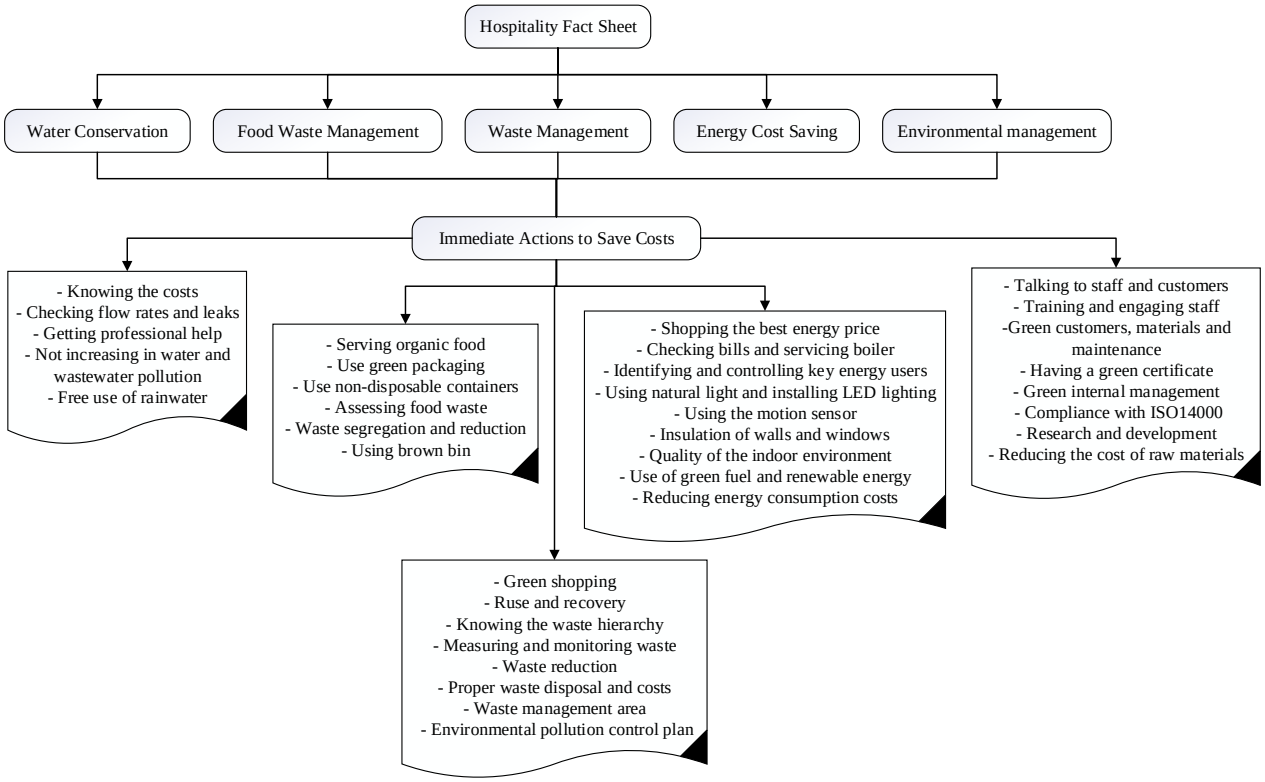


Fig. 1 Hospitality.

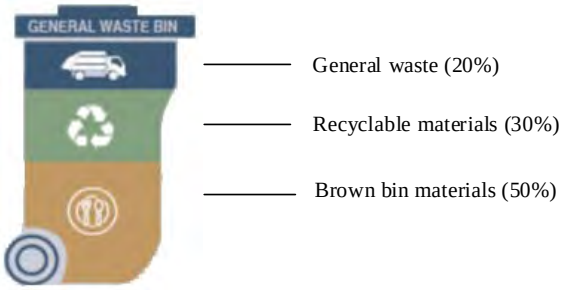


Fig. 2 Better waste segregation.

Fig. 3 Waste hierarchy.

2.6 Energy cost saving

Energy is the biggest utility cost for hospitality sector. Regular reviews of energy usage and costs can save significantly. Energy saving can be attained by minimizing energy supplies payments and consumption. These reductions will improve the hospitality sector competitiveness, and contribute to reducing greenhouse gas emissions and mitigating climate change. Replacing old inefficient equipment with a new one can cut running costs which included electricity, chemicals and labor (Fig. 4) (EPA, 2021a).

Fig. 4 Replacing old inefficient equipment.

3 Theoretical Background and Hypotheses Development

3.1 Resource-based view

This study is based on the RBV theory of the firm. A main premise of the RBV theory is that competitive advantage is a function of the resources and capabilities of the firm. The four attributes of resources that can give rise to a firm's competitive advantage are value, rarity, imperfect imitability, and lack of substitutability. Valuable resources help firm exploit opportunities and/or avoid threats in the environment and enable it to develop and/or implement strategies to improve its productivity (Kshetri, 2008). The amount to which an organization possesses and manages such resources determines the height of a firm's performance. From the RBV, a firm's resources include physical, human, and organizational resources. Physical resources include equipment, raw materials, and any other physical assets of the firm. Human resources refer to the firm's

collective experience, training, and intelligence, in addition to the insights of its employees. Organizational resources reflect the firm's reporting structure and systems, in addition to relationships among groups in the firm and within its environment (Haldorai et al., 2023). When people are considered to be a main resource, it is significant to maximize their capabilities and knowledge and to prevent its outflow (Dul and Neumann, 2007). From the RBV, a firm's competitive advantage comes from its superior resources. A firm is therefore advised to pick its strategy based on its resources. According to RBV, the strategic decisions of firms will be formed by the cognitive capabilities of their managers. Strategic restructuring may be impeded not only by constraints related to the lack of organizational resources, but also by a lack of managerial ability to undertake change. Strategic flexibility is the joint outcome of a firm's resources and its ability to coordinate their uses (Yang and Morgan, 2011). This study considered the TMGC and GHRM to be two important intangible resources that can influence GEE and contribute to the EP of firms. In line with the RBV paradigm, TMGC and GHRM are valuable organizational resources that drive GEE, which in turn contributes to superior EP.

3.2 Hypotheses development

3.2.1 Top management green commitment and green employee empowerment

TMGC is a top management's feeling and attachment toward an organization's environmental management (Khan et al., 2022). The dedication of individuals is important for an organization to achieve its strategic goals for they are accountable for optimizing the use of its resources. When top management demonstrations dedication to environmental issues, employees will have a more favorable impression of green practices, leading to improved environmental behaviors. When top management is committed to environmental issues, they make the essential resources available for the successful implementation of GHRM (Haldorai et al., 2023). Employees must be persuaded, empowered and eco-conscious to ensure that pursue green organizational functions (Nur Aina and Irmawati, 2019). Today's not only employees should take responsibility for green management tasks, but also organizations should become more concerned about their existence as citizens of the society. Alike other populations, organizations are obligated to best serve the society in which it operates its business. Thus, the employee empowerment is need of the organizations in order to meet versatile demands of customers in more influential and customized way. As this employee empowerment is done to ensure fulfillment of green tasks, so it can be termed as GEE (Tariq et al., 2014). The empowerment of green employees is all activities involved in the development, implementation, and continuous system maintenance aimed at making the employees of an organization go green (Adi et al., 2021). GEE will come under the umbrella of TMGC. With this, the relation between TMGC and GEE is gaining importance (Tariq et al., 2014). Therefore, it can be hypothesized that:

H_1. "TMGC is positively related to GEE."

3.2.2 Green employee empowerment and environmental performance

Employees may be more inspired to show discretionary behavior when it comes to environmental policy as a result of their improved sense of empowerment (Ashraful Alam et al., 2021). When Employee are empowered in following green tasks within an organization, this will be called GEE playing avital role in an organization. Green employee has an important role to provide moral support to their employees to confirm that employees are well motivated when they come to collaborate with customers. The empowerment of green employees includes various activities that have relationships with job satisfaction. Employees can empower customers to reach their goals and become motivated employees to lead to a profit company environmentally friendly (Hutomo et al., 2020). As employees gain knowledge on environmental issues via environmental training, their contribution to the environmental performance of the organization increases (Pham et al., 2020). GEE is one of the most crucial elements in making EP green (Sidra, 2022; Hutomo et al., 2020). EP states the commitment of organizations to protect the environment and to reveal measurable operational parameters that are within the

prescribed limits of environmental care (Úbeda-García et al., 2022). Strengthening model practices that encourage green practices and continue to convey the organization's green values to existing employees will encourage them to hold the values and mission of the organization and contribute to long-term EP (Hadi et al., 2023). Hotel environmental performance is defined as a hotel's environmental outcome from the environmental activities that reduce negative effects on the environment (Gulakdeniz and Karadas, 2024). Therefore, it can be hypothesized that:

H_2. "GEE is positively related to EP."

3.2.3 Top management green commitment and environmental performance

As noted above, TMGC refers to the extent to which an organization's top managers show commitment to preserving the natural environment, and supporting the organization's green initiatives. TMGC as a valuable resource of an organization as their green commitment is rare, valuable, and hard to imitate. Top managers who are committed to green initiatives set environmental strategies, make the necessary resources available to improve their organization's EP, and support their subordinates' capacity to accept their environmental tasks (Hoang et al., 2025). Organizations' commitment to implement environmentally friendly work processes must initiate with top management's commitment because its top management has a significant role in responding and considering utilizing its existing resources to reach its strategic objectives (Chawewonga and Naipinit, 2023). Considering environmental issues at the strategic level benefits organizations because it allows organizations to identify new business prospects using environmental performance as a source of strategic edge. Top management with a concern for environmental issues are regarded as intangible assets in the context of continuous environmental improvement. When senior management recognizes the possible gains of environmental initiatives, they will be committed to participating in measures that will ultimately increase environmental performance (Haldorai et al., 2022). From the above discussion it is obvious that although proper drivers are necessary, superior environmental performance through green practices may not be attained without top management commitment. However, there is a lack of research examining the mediating role of GEE. Therefore, it can be hypothesized that:

H_3. "TMGC is positively related to EP."

H_4. "GEE mediates the relationship between TMGC and EP."

3.2.4 Green human resources management and green employee empowerment

GHRM refers to using human resources management practices to strengthen environmentally sustainable practices and increase employee's commitment to the issues of environmental sustainability (Adi et al., 2021). GHRM has been considered one of the most effective segments of human resource management. GHRM practices increase employees' green skills through recruitment, training, performance evaluation, and reward systems (Sarfo et al., 2024). The existing literature of GHRM practices has important impact on green behavior (Rashid et al., 2023). To motivate green employees' behaviors, GHRM practices are considered as a critical HRM strategy to raise employees' environmental awareness at the workplace (Aboramadan, 2022). GEE is a most influential behavior to achieve organizations green goals. GEE is used as a strategic instrument to motivate employee re-evaluate their job prerequisites, search for meaningfulness and increase their competency level at the job (Rashid et al., 2023). The GEE concept co-exists in the organization which is involved in green practices (Tariq et al., 2014). GHRM empowers employees, improving their performance and discipline. management of green human resources may increase employee engagement and convenience and attract talented individuals. GHRM is seen as instrumental in heightening employee environmental awareness and elevating organizational environmental performance by promoting green behaviors (Sarfo et al., 2024). When employees are empowered in following green tasks of organization this will be termed as GEE

which will come under the umbrella of GHRM. With this, the relation between GHR Mand GEE is gaining importance (Aboramadan, 2022; Tariq et al., 2014). Therefore, it can be hypothesized that:

H_5. "GHRM is positively related to GEE."

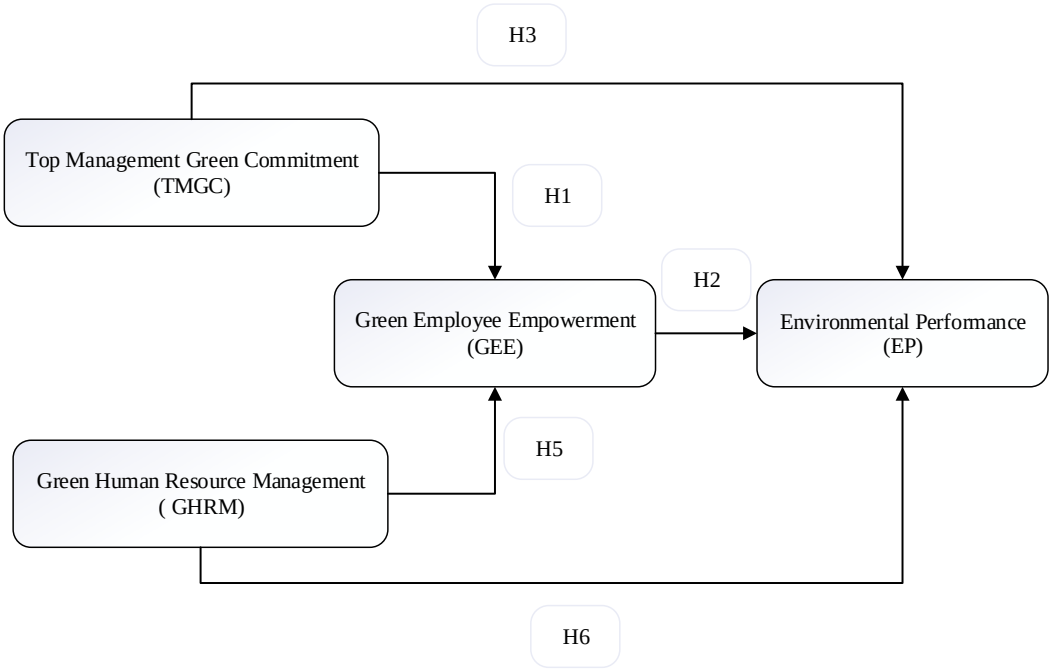
3.2.5 Green human resources management and environmental performance

GHRM is defined as the alignment between traditional human resource practices (such as training and performance appraisal) and environmental policies and objectives (Molina-Azorin et al., 2021). GHRM is a usual human resource management practice with the inclusion of some environmental strategies only. GHRM is the diverse features of human resource management designed to develop a green employee i.e., employees who are familiar with the importance of environmental protection activities (Qamar et al., 2023). Developing an employee's green capabilities entails assimilation conclusive environmental thinking via human resource processes such as leadership, training, recruiting, selection, and compensation. Employees who have been recruited, trained and rewarded continue to be motivated by performance measurement and remuneration systems that emphasize chances for environmental performance improvement (Qamar et al., 2023; Fang et al., 2022). Many researchers have examined the relation among GHRM practices and the EP of organizations. These researchers find that GHRM practices positively affect a firm's environmental performance by reducing waste and organizational efficiency. In general, GHRM practices can help employees adopt more environmentally friendly behaviors, voluntarily improving organizational performance (Fang et al., 2022). Nevertheless, admitting the relationship among GHRM practice and EP is widely known, any research on how human resource management execute green practices without considering GEE is incomplete. Therefore, it can be hypothesized that:

H_6. "GHRM is positively related to EP."

H_7. "GEE mediates the relationship between GHRM and EP."

Based on the above Theoretical background and hypotheses development, Fig.5 shows the proposed research model for the present study.



H_4: TMGC-GEE-EP

H_7: GRM-GEE-EP

Fig. 5 Proposed research model.

4 Methodology

4.1 Sample and data collection

The present study was conducted among hotels in Iran. The statistical population of this study consists of three-star, four-star, and five-star hotels in Iran that may consider environmental measures in their services to their customers. Questionnaires were distributed among employees of 20 three-star hotels, 20 four-star hotels, and 20 five-star hotels. Finally, the completed questionnaires of 58 hotels were used for data analysis. A maximum of 5 questionnaires were distributed to each hotel. Considering the level of data analysis in this study, which is organizational, the average of the questionnaire data for each hotel was finally taken.

4.2 Measures

All measures were rated on a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Top management green commitment: TMGC was measured using adapted three-items from Haldorai et al.'s (2022).

Green human resource management: GHRM was measured using adapted four-items from Haldorai et al.'s (2022).

Green employee empowerment: GEE was measured using adapted four-items from Hanaysha (2016).

Environmental performance: EP was measured using adapted seven-items from Haldorai et al.'s (2022) hotels environmental performance.

4.3 Data analysis

To analyze the proposed research model, the authors employed PLS-SEM using Smart PLS software (Ringle et al., 2015) since of the soft assumptions on distribution, the prediction-oriented nature of the study, the complex model, and the ease of model specification.

5 Results

5.1 Descriptive statistics

The mean and standard deviations (denoted in parentheses) of the constructs are as follows: TMGC: 3.262 (0.955), GHRM: 3.561 (0.794), GEE: 3.427 (0.777), EP: 3.595 (0.905). The respondent profile is shown in Table 1. As indicated in Table 1, the majority of the 241 participants are male and approximately half of these falls in the age group 45–54 years. More than half the respondents have earned a 4-year college degree and are affiliated with the food production.

5.2 Hypotheses testing

The authors used the two-step approach to test the proposed model as Anderson and Gerbing suggested (1988). First, they evaluated the measurement model to test the validity and reliability of the instruments following the recommendations of Hair et al. (2019). Then, they examined the structural model to test the proposed hypotheses. To measure the model, they assessed the loadings, average variance extracted (AVE), and the composite reliability (CR). The loadings for all reflective items exceeded the value of 0.7, the AVE was above the 0.5, and the CR was above 0.7 (Hair et al., 2019). They examined the validity and reliability of the second-order constructs because this study had 2 s-order constructs, namely GHRM and GEE that is shown in Table 2. The second-order measurements were also valid and reliable. They examined the factor weights to validate the formative measures. As shown in Table 2, the formative indicators significantly contribute to their respective constructs as they are significant at $p < 0.05$ (Chin, 1998). The authors then assessed the multicollinearity, and the results indicated that the variance inflation factor (VIF) was less than 5 (Hair et al., 2019).

Table 1 Profile of respondents.

Category	Frequency	Percentage
Gender		
Male	144	59.8
Female	97	40.2
Age (years)		
<25	3	1.2
25–34	42	17.4
35–44	55	22.8
45–54	123	51
>55	18	7.5
Education level		
High school graduate and below	20	8.3
2-year college	38	15.8
4-year college	141	58.5
Post graduate	42	17.4
Department		
Front Office	10	4.1
Housekeeping	49	20.3
Food and Beverage	33	13.7
Food Production	79	32.8
Human Resources	10	4.1
Maintenance	15	6.2

Table 2 Results of measurement model.

Construct	Loading	CR	AVE
Top management green commitment (TMGC) (First order reflective)		0.885	0.722
Top management within our hotel treats environmental protection as an important issue.	0.872		
Top management and ownership groups within our hotel allocate sufficient resources to implement environmental projects.	0.831		
Top management within our hotel follows up on suggestions for improvement on environmental protection.	0.845		
Green human resource management (GHRM) (Second order reflective)		0.913	0.585
Our hotel is very particular about green recruitment and selection employees.	0.897		
Green training and development within our hotel are a priority.	0.931		
Green performance management and appraisal within our hotel are implemented for all employees.	0.873		
Green compensation and reward within our hotel are implemented for employees who make suggestions for improvement on environmental programs	0.861		
Green employee empowerment (GEE) (Second order reflective)		0.937	0.624
Employees within our hotel feel competent to perform the environmentally friendly tasks required.	0.933		
Employees within our hotel are confident in their abilities and skills to do their job while protecting the environment.	0.939		
Employees within our hotel have the authority to make the necessary environmentally	0.799		

friendly decisions to do their jobs well.			
Employees within our hotel have significant opportunity for interdependence and freedom in how they do their work to preserve the environment.	0.883		
Environmental performance (EP) (First-order formative)		0.942	0.789
Environmental management within our hotel has reduced waste.	0.795		
Environmental management within our hotel has conserved water usage.	0.907		
Environmental management within our hotel has conserved energy usage.	0.799		
Environmental management within our hotel has reduced purchases of non-renewable materials, chemicals, and components.	0.914		
Environmental management within our hotel has reduced overall costs.	0.936		
Environmental management within our hotel has improved its position in the marketplace.	0.921		
Environmental management within our hotel has helped enhance the reputation of our hotel.	0.927		

The authors evaluated the discriminant validity using the Heterotrait-Monotrait (HTMT) criterion (Henseler et al., 2015). The HTMT values ≤ 0.85 represent the stricter criterion and values ≤ 0.90 represent the lenient criterion. As Table 3 shows, the values of HTMT were below the stricter criterion of 0.85. In total, the reflective measurement model showed sufficient convergent and discriminant validity.

Table 3 Discriminant validity.

	TMGC	GHRM	GEE	EP
TMGC				
GHRM	0.646			
GEE	0.657	0.706		
EP	0.619	0.611	0.679	0

Subsequent, the authors evaluated the structural model. The bootstrapping procedure was followed with subsamples (Hair et al., 2019). First, the effect of the two predictors on GEE was tested. The R^2 was 0.82, representing that the two predictors explained 82% of the variance in GEE. TMGC (β= 0.416, p< 0.001) and GHRM (β= 0.519, p< 0.001) are positively related to GEE, hence supporting H1 and H6. Next, the effect of GEE on EP was examined. GEE (β = 0.652, p < 0.001) was positively related to EP, thus supporting H2. An R^2 of 0.80 indicated that TMGC, GHRM, and GEE explain 80% of the variance in EP. TMGC (β= 0.211, p<0.001) and GHRM (β= 0.153, p< 0.001) were positively related to EP, supporting H3 and H5. The authors to test the mediation hypotheses, bootstrapping the indirect effect was performed, following the recommendations of (Preacher and Hayes (2008)). Results showed that TMGC → GEE → EP (β= 0.271, p<0.05) and GHRM → GEE → EP (β= 0.339, p< 0.05) were significant. The confidence intervals bias-corrected 95% also did not show any intervals straddling a zero, thus confirming the findings. Hence, H_4 and H_7 were also supported. The results of hypotheses testing are summarized in Table 4.

Table 4 Summary of results.

Hypotheses	Path coefficient	t-value	Result
H_1: TMGC→GEE	0.416	3.153	Supported
H_2: GEE→EP	0.652	3.359	Supported
H_3: TMGC→EP	0.211	2.255	Supported
H_4: TMGC→GEE→EP	0.271	2.291	Supported
H_5: GHRM→GEE	0.519	4.748	Supported
H_6: GHRM→EP	0.153	2.351	Supported
H_7: GHRM→GEE→EP	0.339	2.732	Supported

The findings Uslu et al. (2023) exhibited that GHRM practices can influence the perceptions of employees regarding their organizations' commitments to green psychological climate and their environmentally responsible behavior.

6 Discussion

This research examined the mediating role of GEE in the relationship between TMGC and GHRM with the EP in the Hospitality Industry in Iran. The study tested seven hypotheses about the relationship between TMGC, GHRM, GEE and FEP. The results of the hypothesis testing presented that all hypotheses were confirmed. These findings align with previous studies that highlights the positive relation between TMGC, GHRM, GEE and FEP. Which are as follows (Hoang et al., 2025; Sarfo, 2024; Uslu et al., 2023; Haldorai, 2022; Kumar Sil, 2022; Kularathne, 2020):

Consistent with previous research, TMGC was positively associated with GEE, indicating that top management can effectively disseminate environmentally conscious practices across all levels of employees. Former studies have emphasized the critical role of top management in implementing management programs, particularly in the environmental domain. A strong commitment from top management to environmental initiatives is expected to enhance the possibility of GEE being adopted as a strategic human resource practice. Therefore, top management plays a key role in fostering and promoting GEE. Consistent with previous research, GHRM was positively associated with GEE, indicating that GHRM practices play a critical role in motivating employees to engage in environmental initiatives. These practices influence employees' perceptions of their organization's commitment to a green psychological climate, thus fostering environmentally responsible behavior. Consistent with prior research, the findings specify that GEE enhances EP. Specifically, this study empirically confirms a positive relationship between GEE and EP, aligning with previous studies in the hospitality literature. Consistent with previous research, GEE partially mediates the relationship between TMGC and GHRM with EP. Employees are influenced by TMGC and GHRM to develop an appreciation for environmental protection. Providing effective training and opportunities for employees to engage in green initiatives, such as suggestion schemes, can enhance their sense of green empowerment. These findings highlight the role of management in promotion EP through the values of GEE. This study is among the few that have explored these effects, addressing a serious gap in the existing literature.

7 Conclusion and Limitations

The modern business scenery is undergoing unique transformation due to resource constraints, fast technological advancements and environmental degradation. The increasing awareness of environmental issues has made the concept of "going green" a strategic priority for many organizations. Key green drivers, such as TMGC and GHRM, play a vital role in enhancing EP. Moreover, GEE serves as a mediating factor,

strengthening the relation between these green initiatives and improved environmental performance in the hotel industry. By integrating sustainable practices and fostering employee commitment, organizations can achieve long-term environmental and operational benefits.

This study has certain limitations that should be recognized when interpreting its findings, and these limitations present opportunities for future research. First, this research was conducted within a specific national and industry context—the hospitality sector in Iran. As a result, the findings may not be directly generalizable to other countries or industries. To improve the strength and applicability of the proposed model, future studies should validate it across different countries or industries, considering potential variations in regulatory frameworks, market dynamics, and cultural influences. Second, the study examines only TMGC, GHRM, and GEE in relation to EP. Given the increasing recognition of sustainability as a strategic priority, future studies should discover the effect of a broader set of tangible and intangible resources—such as green technologies, corporate culture, leadership commitment, and employee engagement—on EP. Additionally, integrating emerging concepts such as digital transformation, circular economy principles, and stakeholder collaboration could provide deeper insights into how businesses can drive sustainability whereas maintaining competitive advantage. By addressing these limitations, future research can contribute to a more comprehensive understanding of sustainable business practices, enabling organizations to implement more effective and context-specific environmental strategies.

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