Do Green Human Resource Management Practices Improve Sustainable Performance?
Empirical Evidence From Egyptian Private Hospitals

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ABSTRACT

This article explores the role of green human resource management (GHRM) practices in improving the sustainable performance of Egyptian private hospitals. Based on the collected data from 398 workers in Egyptian private hospitals, the results show that Egyptian private hospitals applied GHRM practices with lower level of applying the green compensations, green gob analysis and HR planning, and green recruitment and selection. The results supported the relationship between GHRM practices and sustainable performance with moderate level. This requires Egyptian private hospitals to commit to applying GHRM practices with the aim of developing environmental awareness among employees, directing them towards green behavior, and spreading green culture with the aim of supporting sustainable performance.

KEYWORDS:

Green Human Resources Management, sustainable performance, Egyptian private hospitals, environmental sustainable, Economic sustainable, Social sustainable

INTRODUCTION

In the landscape of modern organizational challenges, the stewardship of environmental and corporate resources has become a paramount concern. It is incumbent upon decision-makers and executive leadership to engage in the judicious management of these resources by formulating and implementing sustainable operational strategies (Chowdhury, 2017). Recent pressures from a diverse array of stakeholders have necessitated a shift towards administrative practices that are ecologically considerate, promoting sustainable organizational performance while simultaneously safeguarding vital resources amidst ongoing environmental shifts. This has precipitated the emergence of a novel paradigm that harmonizes the principles of human resources management with those of environmental stewardship, giving rise to the innovative discipline of green human resources management GHRM (Milliman, 2013).

The conceptualization of GHRM marks a significant milestone in the evolution of corporate environmental responsibility. GHRM embodies a strategic fusion that not only advocates for environmental conservation but also aligns with the overarching goals of organizational performance. It is a discipline that requires the development of strategic policies and the execution of plans that are inherently eco-centric, fostering a workforce that is both environmentally conscious and operationally competent (Uslu et al., 2023). Despite its strategic importance, the penetration of GHRM practices in developing countries is in its infancy, especially within the healthcare sector – a sector that stands to benefit markedly from the adoption of these practices in the wake of increasing environmental and societal challenges (Alzyod, 2021).

Sustainable performance of organizations is the prevailing approach in today's world because it is the trend to improve profitability and social and environmental conditions. Sustainability expresses development that meets current needs without affecting the needs of future generations (Malik et al., 2021). It should be emphasized that sustainability is not simply a monetary consideration, but it is a more comprehensive concept concerned with the climate and the general well-being of employees, society, customers, and stakeholders (McGain & Naylor, 2014). Human resources management plays an important role in supporting sustainability; therefore, organizations have become more oriented towards individuals interested in green practices through the adoption of green human resources management and the potential it provides for achieving sustainability and building competitive capabilities.

According to Ryan-Fogarty (2016), medicine is considered one of the most important service sectors, by virtue of providing care for the health of individuals, which requires attention to environmental preservation practices; however, medical care institutions ignore sustainable environmental practices for many reasons, the most important of which is avoiding additional expenses despite the importance of preserving the environment from pollution. Therefore, the attention of health institutions must focus on creating green initiatives to maintain their sustainable performance, such as recycling, energy efficiency, disposal of the harmful medical waste, water and natural resource conservation, sustainable transportation, and green procurement (McGain & Naylor, 2014).

Our paper highlights three key contributions. First, it responds to the lack of empirical studies on GHRM practices in the service sector, and within a unique, developing country situation, and contributes value to the current body of literature by providing empirical evidence for the level of implementation of the GHRM bundle practices in this important service sector. Second, it explores the impact of the GHRM bundles on sustainable performance using mixed methods research (qualitative and quantitative) and contributes important evidence from Egypt to current GHRM practices and sustainable performance literature in the context of developing countries. Third, a conceptual framework was developed, providing a valid mechanism and useful insights for healthcare organizations to facilitate using HR practices as a means for improving sustainable performance. The paper aims to contribute to the literature on GHRM by providing an empirical investigation into its practice within Egyptian private hospitals. By exploring the relationship between GHRM practices and sustainable performance, this research seeks to provide insights that are both theoretically and practically valuable. The study also aims to develop a conceptual framework that can guide healthcare organizations in Egypt and similar contexts to effectively implement GHRM practices and achieve their sustainability objectives.

The exploration of green human resource management within the Egyptian healthcare sector has the potential to contribute significantly to the theoretical foundations of GHRM. Theoretically, this research can expand the domain of GHRM by incorporating insights from a developing country perspective, a context that remains underrepresented in existing literature. In doing so, it may challenge or affirm the prevailing theories of GHRM that have been primarily based on experiences from developed economies. The adaptability and relevance of GHRM practices within the constraints and opportunities unique to the Egyptian context, such as limited resources, policy gaps, and cultural dimensions, will add depth to the understanding of how GHRM can be conceptualized and operationalized in diverse settings. By examining the Egyptian healthcare sector's approach to

GHRM, the study may reveal patterns and models that are applicable or adaptable to other regions, particularly those with similar emerging market characteristics. Furthermore, the research may uncover the underlying mechanisms through which GHRM practices influence sustainable performance, thus contributing to the development of a more robust theoretical framework for sustainability in human resource management.

Practically, the findings of this study are expected to have significant implications for healthcare organizations in Egypt. By identifying the level of implementation and the impact of GHRM practices on sustainable performance, the study could inform policy makers and healthcare administrators about the most effective strategies to promote environmental sustainability. The development of a framework to implement GHRM practices could serve as a valuable blueprint for Egyptian healthcare organizations, enabling them to enhance their environmental performance while simultaneously achieving their healthcare delivery objectives.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Green Human Resource Management

The advent of green human resource management signifies a progressive paradigm in management, wherein there is a deliberate effort to amalgamate human resource practices with the overarching goal of sustainable organizational performance. This initiative is pivotal in steering environmental management and resource conservation strategies within organizations (Dumont et al., 2017).

Institutions are increasingly compelled to innovate and identify methodologies that mitigate their environmental impact, thereby enhancing their sustainable performance. Central to this endeavor is the role of GHRM, which exerts a profound influence on employee behaviors and attitudes towards their roles. The implementation of GHRM practices has been shown to yield positive outcomes in environmental protection, resource conservation, and the advancement of hospital performance and excellence (Jose Chiappetta Jabbour, 2011). The ethos of GHRM lies in its ability to harness human resources sustainably, fostering environmental consciousness and utilizing organizational resources judiciously. This, in turn, contributes to the economic and social prosperity of all organizational stakeholders (Renwick et al., 2016).

In a seminal study, Yusliza (2017) scrutinized the influence of GHRM on sustainability within prominent industrial corporations in Malaysia, discerning that while green recruitment and training positively impact sustainability, other facets such as green job design, green selection, performance evaluations, and compensatory measures do not. Wagner (2013) underscored the criticality of GHRM strategies in attaining sustainability in industrial entities. The findings suggest that GHRM practices bolster employee satisfaction, foster a culture of innovation, and facilitate sustainable development (Wagner, 2013).

Susanto (2023) investigated the nexus between GHRM and employee satisfaction, revealing that GHRM correlates positively with job satisfaction in the industrial realm when employees are deeply engaged with their roles. The study advocated for active employee participation in the formulation of GHRM strategies (Susanto, 2023). Al-Swidi et al. (2021) illuminated the significance of GHRM in enhancing an organization's environmental performance, identifying green employee behavior as a mediating factor between GHRM and environmental outcomes.

Merlin and Chen (2022) examined GHRM's ramifications on organizational reputation and allure, discovering a robust positive association between GHRM practices and both organizational attractiveness and reputation. They recommended managerial commitment to GHRM strategies to cultivate green employee behavior and heighten environmental consciousness (2022). Vanisree and Seema (2021) evaluated the adoption of GHRM strategies within the hospitality sector to foster sustainability, underscoring the strategies' potential in reducing resource waste and operational costs through sustainable resource recycling practices.

Additionally, Kakar and Khan (2015) assessed the impact of GHRM on employee retention and environmental sustainability in Egypt's automobile sector, focusing on three strategic GHRM pillars: green selection and recruitment, training and development, and incentives and benefits. Their research identified a strong correlation between these GHRM strategies and environmental sustainability, noting that green incentives and benefits were particularly influential in cultivating a sustainability ethos (2015). A significant barrier highlighted was the lack of awareness and application of GHRM strategies within the sector, underscoring a critical area for improvement (Kakar & Khan, 2015).

The collective body of recent literature accentuates the multifaceted nature of GHRM practices and their integral role in fostering sustainable organizational performance. Studies by Yusliza (2017), Susanto (2023), and Merlin and Chen (2022) collectively underscore the positive impact of green recruitment, training, and employee engagement on both employee satisfaction and environmental performance. Al-Swidi et al. (2021) highlight the mediating role of green employee behavior, which is pivotal in translating GHRM initiatives into environmental outcomes. This growing body of evidence suggests that GHRM practices not only contribute to sustainable development but also enhance organizational reputation and attractively, suggesting that comprehensive GHRM practices are becoming an essential component of successful organizational strategy.

Our paper aims to extend these findings by examining the full spectrum of GHRM practices within the context of Egyptian private hospitals. We aim to investigate the efficacy of green job analysis, HR planning, recruitment and selection, training and development, and performance appraisal and compensation systems. Furthermore, we intend to explore the dimensions of green health and safety, alongside employee relations, grievances, and discipline by correlating these practices with sustainable performance outcomes. Our study seeks to provide a holistic understanding of how GHRM practices can be effectively integrated into the healthcare sector, thus contributing to the sustainability of both the organization and the environment.

Green Human Resource Management Practices

Green Job Analysis and Human Resource Planning

The analysis of green jobs necessitates a thorough review of all job-related information, with a focus on understanding the environmental aspects of the role. This process involves identifying the necessary skills and competencies that prospective candidates must possess to meet the job's environmental objectives and responsibilities. At the present time, many companies have designed new jobs related to protection of the environment. Protecting the environment, preparing environmental reports, and adhering to health and safety standards have become among the basic requirements for filling the job. Conducting green job analysis helps in planning the organization's needs. Many companies are currently participating in environmental management programs and activities such as ISO 14001, cleaner production, and sustainability.

All of these practices depend on environmental management and require new jobs and modern skills, which require applying the concept of green planning for human resources to protect the environment and the organization's resources (Arulrajah & Nawaratne, 2015). Green job analysis and HR planning practices can be summarized as integrating responsibilities and tasks related to protecting the environment, including the environmental dimension as one of the main tasks for all jobs in the job analysis, designing and implementing new jobs that focus on aspects of environmental management, engaging in forecasting the number of employees and their skills needed to implement environmental management programs and activities (such as ISO 14001, clean production, sustainability), and participating in defining the strategies necessary to forecast environmental labor needs.

Green Recruitment and Selection

Green recruitment is concerned with attracting an environmentally oriented workforce by integrating environmental policies with the company's recruitment policy to attract individuals with green

potential and environmental orientation (Phillips, 2007), and placing green advertisements about environmental values, such as "Be part of the company's green team," or "We are a socially and environmentally responsible company." Then, individuals are selected based on their environmental interests and their willingness to participate in initiatives to preserve the environment and company resources to achieve the organizations' sustainable performance goals (Pham & Paillé, 2020). Green recruitment and selection practices can be summarized as: including the environmental criterion within the companies' recruitment and selection strategy, promoting job advertisements and interviews focused on protecting the environment and conserving resources, attracting and selecting employees based on their degree of knowledge and environmental awareness, selecting new candidates who have the ability and desire to integrate into the environmental work system, and employing experts and consultants in the field of energy and environmental protection.

Green Training and Development

Environmental training is of great importance in transforming organizations into green organizations by developing the skills and capabilities of employees required to manage green human resources through training on resource conservation, recycling and waste management, supporting flexible schedules, and implementing occupational safety and health programs, with the aim of creating environmental awareness and a green culture for workers. Companies are currently analyzing the environmental training needs of employees effectively to create and maintain environmentally oriented employment participating in achieving organizations sustainable performance (Opatha, 2013). Among the most important green training practices are the following: involving green training needs in the hospitals training needs plan, providing environmental training for all employees to develop their green skills, creating environmental awareness, and identifying green training needs for employees to make them more concerned about sustainability.

Green Performance Appraisal and Compensation System

The green performance measurement standards should be aligned with the organization's environmental performance standards (Renwick & Maguire, 2013). In order to maintain their environmental performance, many organizations have established the environmental management review system (EMIS), environmental auditing processes, and the disposal of harmful waste with the aim of controlling the use of the organization's resources and protecting the environment from pollution. Organizations can engage employees at all levels with the aim of achieving the targeted environmental performance by setting green goals and responsibilities and motivating them to be committed to their roles in achieving the organization's green goals (Ardiza et al., 2021). Green reward management is considered the equivalent of evaluating the good environmental performance of employees, whether through financial motivations such as incentives, bonuses, and benefits or non-financial rewards such as appreciation, prizes, special recognition (Ritter, 2003). Many companies, have begun to apply green rewards management practices; one example is Xerox, which presented excellence awards to encourage environmental teams that seek to conserve resources, reduce waste, and recycle damaged paper, with the aim of motivating other employees to apply green environmental practices and achieve environmental excellence for the organization. The most important green performance appraisal and compensation system practices are: developing environmental standards that encourage new ideas and suggestions necessary to preserve the environmental resources, integrating green performance appraisal with organization performance standards, designing green targets and sustainable responsibilities with the support of top management, and providing financial and non-financial rewards to employees according to their environmental performance.

Green Health and Safety Management

Recently, redesigning a health and safety department with the aim of ensuring a green workplace for all employees has become a priority of many companies. A green workplace is defined as a workplace

that is environmentally sensitive, resource efficient, and socially responsible. These imperatives lead to maintaining the health of employees and strengthening the company's image in the minds of employees and society and prevent health problems and disease caused by a hazardous work environment (Thilakarathne et al., 2019). Green health and safety management strategies such as maintaining a safe and green work environment to reduce stress and work risks, creating green health and safety strategies and guidelines to maintain the green and safety workplace, and improving the physical conditions of work to raise the morale of workers and improve their environmental performance.

Green Employee Relations, Grievances, and Discipline

Green relations for employees promote their participation in the organization's green strategies by proposing green ideas and implementing them to foster green discipline through employees' commitment to green practices and standards for protecting the environment and the organization's resources and developing disciplinary system to punish employees in the case of environmental violations. That is, encouraging green discipline is a major consideration for managing and preserving the environment with the aim of achieving the organization's green strategies and obligating its employees (Susanto, 2023) such as through participation of employees in submitting suggestions for the success of green workplace, communication with unions and external organizations in addressing environmental issues, development of rules and instructions regarding commitment to green environmental behavior, and development of a disciplinary system to punish employees in the case of environmental violations.

Challenges of GHRM Practices

Applying green human resources management practices in developing countries faces many challenges that require study to overcome (Bekhit & Mahmoud 2023). Some challenges are related to employees' lack of awareness of the importance of green human resources management and their inability to use environmentally friendly technology. There are also challenges related to management, represented by a lack of management conviction and support of the importance of applying green management of human resources practices, and the lack of official policies and procedures to be applied by the administration, as well as its failure to motivate workers to implement GHRM practices (Guerci et al., 2016). Additionally, there are organizational challenges within Egyptian private hospitals, which include insufficient financial and human capabilities necessary to implement green management of human resources and the absence of a vision for hospitals to implement it, as well as the need to develop an organizational culture directed towards green practices of HRM. Finally, there are challenges related to the environment, represented by the absence of legislation and laws requiring hospitals to properly manage medical waste and preserve the environment and its resources to achieve environmental sustainability (Islam et al., 2020).

Based on the above review of literature, the importance of applying green human resources practices in Egyptian private hospitals is clear – from green HR planning and recruitment to green employee relations, and discipline to preserve resources and achieve sustainable development; therefore, the researcher studied the extent of applying green human resources practices in Egyptian private hospitals.

H1: It is expected that green human resources management practices will be adopted in Egyptian private hospitals.

Sustainable Performance

Recently, sustainability has gained considerable attention from managers because of the increasing trend towards preserving the environment and organizational resources. Sustainability is considered an effective approach to differentiate organizations and a source of increasing their competitive

capabilities through innovation and achieving a balance between the organization's economic, social, and environmental performance. Mousa and Othman (2020) defined sustainability as a means of supporting the organization economically, environmentally, and socially, adding real value to stakeholders, and trying to spread green culture in the organization to create workers oriented toward green practices, community development, and preserving the organization's resources. Achieving this balance is considered an important challenge for organizations that requires them to adopt the concept of sustainability in all their practices to achieve human well-being (Ishak, 2010). Therefore, sustainability is not limited to financial aspects only, such as profits and increasing the return on investment, but extends to include environmental and social dimensions by maintaining a green environment as well as achieving the well-being of employees, customers, and society as a whole (Higgins & Coffey, 2016). Sustainability has three dimensions: environment performance, economic performance, and social performance. Environmental performance focuses on reducing potential environmental risks, transitioning to a green environment, and preserving hospital resources. Economic performance is concerned with financial performance and internal operations, and social performance focuses on achieving the well-being of workers, customers, and stakeholders (Yusliza et al., 2020).

Considering the above, the researcher can define sustainable performance as achieving the environmental, social, and economic balance of hospitals performance to achieve the different goals of the stakeholders.

Sustainable Performance Dimensions

The dimensions of sustainable performance are economic, environmental, and social performance.

Economic performance refers to the financial performance and economic savings resulting from the application of green human resources practices that add real value to the organization. Malik et al. (2020) suggested practices such as: decreasing costs for energy consumption, decreasing fees for waste treatment or discharge, and decreasing fines for environmental accidents. Egyptian hospitals should be oriented towards economic performance by applying pollution prevention and cleaner technologies, performing regular maintenance of buildings and equipment, and working to strengthen their financial capabilities to ensure survival and obligations.

Environmental performance refers to the impact of applying green environmental practices on social factors related to the following aspects: commitment to implementing environmental standards, reduction in the use of environmentally harmful materials, and reduction in energy consumption and material usage, with the aim of preserving the environment (Malik et al., 2021). Egyptian hospitals should be oriented towards environmental performance by following environmental legislation to rationalize the use of resources and implementing standards to reduce harmful medical waste.

Social performance refers to the social results of applying green practices related to the organization's image and its ethical commitment to all stakeholders such as employees, customers, suppliers, and society. These practices include improving stakeholders' welfare, applying health and safety practices, and improving community awareness of rights and claims (Teh et al., 2022). Egyptian hospitals can be oriented towards social performance by implementing social responsibility to reduce the harmful effects and environmental risks on society, paying attention to community complaints and suggestions to meet their requirements, protecting their rights, developing their awareness and following the ethical rules in monitoring and controlling the quality of medical services, and applying safety practices in the working environment.

Relationship Between GHRM and Sustainable Performance

Guyor (2013) concluded that the relationship between GHRM and sustainable performance is represented by the ability of organizations to align human resources practices with their environmental goals to achieve sustainable development and attempt to consolidate the image of the organization and the products or services they provide to support social responsibility to achieve the goals of their stakeholders. Therefore, green human resources management plays an important role in enhancing

environmental performance and creating awareness among employees about environmental issues and sustainable development through developing financial, environmental and social performance, which aims to protect the environment and organizations' resources (Chowdhury et al., 2017). GHRM also involves creating a green culture and disseminating it among employees, preserving the organization's resources, reducing the negative impact of the environment as much as possible, and engaging labor in all green practices (Longoni, 2018). Therefore, this research aims to study the relationship between green human resources practices and sustainable performance in Egyptian private hospitals. Thus, the second hypothesis can be formulated as:

H2: There is a significant relationship between green human resources management practices and sustainable performance in Egyptian private hospitals.
H2.1: There is a significant relationship between green human resources management practices and environmental performance.
H2.2: There is a significant relationship between green human resources management practices and economic performance.
H2.3: There is a significant relationship between green human resources management practices and social performance.
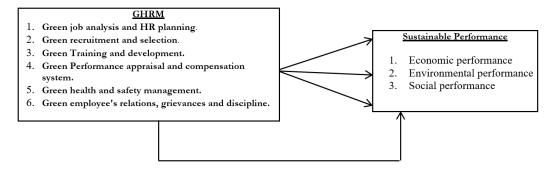
RESEARCH METHODOLOGY

Research Model

The researcher developed the following model to assess the extent of applying green human resource management practices in Egyptian private hospitals in relation to sustainable performance, as shown in Figure 1.

Sample Selection

To test the proposed hypothesis in this study, the sample represented the population with a given confidence level of 95% (Dean & Voss, 1999). The research population consists of all employees in Great Cairo private hospitals. According to the Annual Bulletin of Health Services Statistics (2022), the population includes 15,225 employees in Cairo Governorate private hospitals, 12,792 in Giza Governorate private hospitals, and 1,514 in Al-Qalyubia Governorate private hospitals, producing a total population of 29,531. A simple random sample was selected (Smith et al., 2016), which was calculated by the following formula:, where = sample size, =population size, and =standard permitted error, adopted as 5%. Based on this equation, the sample size is 398.

Figure 1. Model of GHRM practices and relation to sustainable performance

Data Collection

The research survey was designed to know the opinions of the respondents regarding the study variables, established in the literature review section, using a five-point Likert scale, and it was conducted using the Google Form tool. The questionnaire was divided into two parts. The first part measures GHRM practices applied in private hospitals, and it includes six practices. first, green job analysis and HR planning (questions 1-6); second, green recruitment and selection (questions 7-10); third, green training and development (questions 11-13); fourth, green performance appraisal and compensation system (questions 14-19); fifth, green health and safety management (questions 20-22); sixth, green employee relations, grievances, and discipline (questions 23-28). The second part measures sustainable performance divided into three dimensions: first, environmental performance (questions 29-32); second, economic performance (questions 33-35); third, social performance (questions 36-38).

Data Analysis Techniques

A statistical package for social sciences (SPSS) was used to analyze the data. The study used Cronbach's alpha coefficient to verify the validity and reliability characteristics; when Cronbach's alpha is greater than 0.70, the reliability is good. Additionally, it used the sign test, a non-parametric hypothesis test used when testing general attitude is wanted via a sample that is not distributed according to the normal distribution. The study also used logit regression, a non-parametric regression that is applied when the dependent variable does not follow the normal distribution. The study also used Spearman correlation coefficient, which is often used to evaluate relationships involving ordinal variables, to determine the order in which green human resource practices are related to the sustainable performance dimensions (Hollander et al., 2013).

RESULTS AND DISCUSSION

Reliability and Validity Statistics

The reliability analysis, Scale analysis, is applied through Cronbach's alpha, which is done to confirm if the sample can be considered representative of the population and to measure the internal consistency between responses. The null hypothesis is there is no homogeneity between the dimensions of each of the main variables. Table 1 suggests that the internal reliability, as measured by Cronbach's alpha, is highly acceptable (values from 91% to approximately 98%), and the validity also is highly acceptable (values from 95%-98%), as compared with similar research in social science (Hair et al., 2010).

Descriptive Statistics for Study Variables

Green Human Resource Management Practices

Table 2 shows the weighted mean, standard deviation, relative importance, and coefficient variation for every statement of GHRM practices.

The previous table shows the agreement of most sample members on all green human resources management practices, and the study sample indicates homogeneity. The statements are ordered according to their importance as follows:

Table 1. Reliability and validity test

Study variables	statements	Cronbach's Alpha coefficient	Validity coefficient
GHRM practices	28	0.980	0.989
Sustainable performance	10	0.917	0.957
overall	38	0.982	0.990

Table 2. Weighted mean, standard deviation, relative importance and coefficient of variation for GHRM practices

Statement	Weighted Mean	Standard deviation	Relative Importance %	Coefficient of Variation %
1- Green ,Job analysis and HR planning 1-Integrating the environmental dimension into job description requirements.	3.79	1.23	75.82	32.57
2-Green competencies are requirements in the job specifications	4.01	1.07	80.10	26.62
3-New jobs related to the environmental Protection Programs.	4.21	0.92	84.18	21.94
4- Planning HR needs with the concern of the environmental management	3.87	1.10	77.48	28.47
5-Involved the Environmental plans in the hospital's strategic plans.	4.07	0.86	81.36	21.22
6- Forecasting environmental labor needs.	3.98	1.05	79.65	26.44
2- Green Recruitment& selection 7-environmental criterion is one of hospital recruitment & selection strategy.	3.95	1.24	78.94	31.34
8-Job advertisements and interviews focus on green environmental management	3.85	1.29	77.03	33.37
9-Attracting and selecting employees based on awareness of green environmental management.	3.98	1.17	79.55	29.33
10-The hospital employs experts in the field of energy and environmental Protection.	4.07	0.99	81.46	24.33
3-Green Training and development 11-Green training needs are involved the training needs plan.	4.09	1.04	81.86	25.33
12-Environmental training is one of the hospital's Priorities.	4.11	0.97	82.17	23.73
13-The training Programs aimed to create employee's awareness of environmental Practices.	4.34	0.79	86.80	18.13
4- Green performance appraisal and compensation system 14-Integrating green performance appraisal with organization performance standards.	4.11	0.98	82.12	23.84
15-The employee's environmental performance depending on their ability to protect the environment.	4.14	1.03	82.87	24.76
16-Top management encourage green performance	4.02	1.10	80.45	27.39
17-Rewarding employees according to their environmental Performance.	3.71	1.50	74.16	40.48
18-Green incentives and rewards for supporting positive green behaviors.	3.83	1.51	76.68	39.26
19-The fairness in green incentives and rewards among employees.	3.88	1.37	77.63	35.35
5-Green health and safety management 20-Maintaining Safe and green work environment	4.12	1.01	82.42	24.58
21-Creating green health and safety strategies	4.39	0.74	87.76	16.84
22-Improving the work physical conditions to improve the environmental performance.	3.95	1.22	78.94	31.03
6-Green employee's relations, grievances and discipline 23- Employees are submitting the suggestions of green workplace.	4.26	0.87	85.24	20.38
24-The top management provided the environmental facilities.	4.07	1.06	81.36	25.95
25-Communication with unions and external organizations in addressing environmental issues.	4.22	0.83	84.48	19.73
26-Developing rules and instructions to maintain green environmental behavior.	4.29	0.89	85.89	20.62
27-Developing disciplinary system to punish employees in the case of environmental violations.	4.03	0.95	80.65	23.46
28-Discipline motivating employees to achieve self-control on environmental activities.	3.90	1.09	77.98	27.94

- Hospitals creating green health and safety strategies.
- Training programs aimed to create employees awareness of environmental practices.
- Developing rules and instructions to maintain green environmental behavior.

- Employees are submitting the suggestions for the success of green workplace.

Sustainable Performance

Table 3 shows the weighted mean, standard deviation, relative importance, and coefficient variation for every statement of sustainable performance.

The previous table shows the agreement of most sample members on all sustainable performance dimensions, and the study sample indicates homogeneity. The statements are ordered according to their importance as follows:

- Harmful wastes recycled in a way that doesn't harm the environment.
- Following environmental legislation to rationalize the use of resources.
- Implementing the hospital social responsibility to reduce the harmful effects on society.
- Using environmentally friendly technology and medical supplies.

Statistical Testing Hypotheses

Goodness of Fit Test

To test the extent to which the questionnaire statements were subject to a normal distribution, a goodness-of-fit test was used for all statements, as shown in the following table.

Table 4 shows that main variables follow the normal distribution at a significance level of 0.05

Table 3. Weighted mean, standard deviation, relative importance and coefficient of variation for sustainable performance variables

Statement	Weighted Mean	Standard deviation	Relative Importance %	Coefficient of Variation %
1-Environmental performance 29-Follawing environmental Legislations to rationalize the use of resources.	**4.48**	**0.62**	**89.57**	**13.88**
30-Implementing standards to reduce environmentally harmful substances.	**4.40**	**0.62**	**87.91**	**14.14**
31-Harmful wastes recycled in a way that doesn't harm the environment.	**4.49**	**0.59**	**89.87**	**13.20**
32- Using environmentally friendly technology and medical Supplies.	**4.41**	**0.66**	**88.26**	**14.86**
2- Economic performance 33- Reducing raw material cost and unnecessary waste disposal.	**4.20**	**1.06**	**84.08**	**25.26**
34-The application of pollution prevention and cleaner technologies.	**4.00**	**1.20**	**79.95**	**30.14**
35-Performing regular maintenance of buildings and equipment's.	**4.34**	**0.81**	**86.70**	**18.64**
3- Social performance 36- Applying safety working environment.	**4.39**	**0.68**	**87.81**	**15.38**
37-Following the ethical rules in monitoring and controlling the quality of medical services.	**4.36**	**0.72**	**87.20**	**16.52**
38-Implementing the hospital social responsibility to reduce the harmful effects on society.	**4.42**	**0.77**	**88.31**	**17.35**

Table 4. Kolmogorov-Smirnov test

Variables	P-Value	Significance
GHRM practices	0.329	Not Significant
Sustainable performance	0.390	Not Significant
All	0.308	Not Significant

Sign Test

A sign test was used to test the following hypothesis: H1: It is expected that green human resources management practices will be adopted in Egyptian private hospitals. The following table shows the test results.

Table 5 shows the application of green human resources management practices in Egyptian private hospitals at a significance level of 0.05, **which confirms the acceptance of the first hypothesis**: It is expected that green human resources management practices will be adopted in Egyptian private hospitals. As shown in Table 2, the order of **the most important of these practices** were as follows, according to their importance:

- The hospitals creating green health and safety strategies.
- The training programs aimed to create employees of environmental practices.
- Developing rules and instructions to maintain green environmental behavior.
- Employees are submitting the suggestions for the success of green workplace.

    The least important factors, with the lowest level of importance, were as follows:

- Rewarding employees according to their environmental performance.
- Integrating the environmental dimension into job description requirements.
- Green incentives and rewards for supporting positive green behaviors.
- Job advertisements and interviews focus on green environmental management.

Correlation Analysis

Tables 6 and 7 show the coefficients (using Spearman correlation test) on variables that indicate GHRM practices (T1_1,T1_2,T1,3,T1_4,T1_5,T1_6) in relation to sustainable performance dimensions (T2_1,T2_2,T2,3) to test the following hypothesis:

H2: There is a significant relationship between green human resources management practices and sustainable performance in Egyptian private hospitals. It is divided into the following sub-hypotheses:

H2.1: There is a significant relationship between green human resources management practices and environmental performance.

H2.2: There is a significant relationship between green human resources management practices and economic performance.

H2.3: There is a significant relationship between green human resources management practices and social performance.

The results shown in Table 6 indicate that GHRM practices are significantly associated with dimensions of sustainable performance. Therefore, these findings support H2 and H2.1 hypothesis to support the relationship between green human resources management practices and **environmental**

Table 5. Sign test to study the application of green human resources practices

GHRM practices	p-value	Applied level	Sign
1- Green Job analysis and HR planning 1-Integrating the environmental dimension into job description requirements.	0.00	Positive	Significant
2-Green competencies are requirements in the job specifications.	0.00	Positive	Significant
3-New jobs related to the environmental Protection Programs.	0.00	Positive	Significant
4- Planning HR needs with the concern of the environmental management	0.00	Positive	Significant
5-Involved the Environmental plans in the hospital's strategic plans.	0.00	Positive	Significant
6- Forecasting environmental labor needs.	0.00	Positive	Significant
2- Green Recruitment& selection 7-Environmental criterion is one of hospital recruitment & selection strategy.	0.00	Positive	Significant
8-Job advertisements and interviews focus on green environmental management	0.00	Positive	Significant
9-Attracting and selecting employees based on awareness of green environmental management.	0.00	Positive	Significant
10-The hospital employs experts in the field of energy and environmental Protection.	0.00	Positive	Significant
3-Green Training and development 11-Green training needs are involved the training needs plan.	0.00	Positive	Significant
12-Environmental training is one of the hospital's Priorities.	0.00	Positive	Significant
13-The training Programs aimed to create employees awareness of environmental Practices.	0.00	Positive	Significant
4- **Green performance appraisal and compensation system** 14-Integrating green performance appraisal with organization performance standards.	0.00	Positive	Significant
15-The employee's environmental performance depending on their ability to protect the environment.	0.00	Positive	Significant
16-Top management encourage green performance	0.00	Positive	Significant
17-Rewarding employees according to their environmental Performance.	0.00	Positive	Significant
18-Green incentives and rewards for supporting positive green behaviors.	0.00	Positive	Significant
19-The fairness in green incentives and rewards among employees.	0.00	Positive	Significant
5-**Green health and safety management** 20-Maintaining Safe and green work environment	0.00	Positive	Significant
21-Creating green health and safety strategies	0.00	Positive	Significant
22-Improving the work physical conditions to improve The environmental performance.	0.00	Positive	Significant
6-**Green employee's relations, grievances and discipline** 23- Employees are submitting the suggestions of green workplace.	0.00	Positive	Significant
24-The top management provided the environmental facilities.	0.00	Positive	Significant
25-Communication with unions and external organizations in addressing environmental issues.	0.00	Positive	Significant
26-Developing rules and instructions to maintain green environmental behavior.	0.00	Positive	Significant
27-Developing disciplinary system to punish employees in the case of environmental violations.	0.00	Positive	Significant
28-Discipline motivating employees to achieve self-control on environmental activities.	0.00	Positive	Significant
Total	0.00	Positive	Significant

Table 6. Spearman correlation coefficient

	T2_1	T2_2	T2_3	T1
T2_1	1.000			
T2_2	0.417*** (0.000)	1.000		
T2_3	613*** (0.000)	0.525*** (0.000)	1.000	
T1	0.461*** (0.000)	0.766*** (0.000)	0.733*** (0.000)	1.000

** Correlation significant at the 0.05 level (2-tailed)

performance in the Egyptian private hospitals at significance level 0.05 in favor of the alternative hypothesis, and the correlation coefficient is **0.461**. H2.2 is also accepted, supporting the relationship between green human resources management practices and **economic performance** at significance level 0.05, and the correlation coefficient is **0.766**. Finally, the results supported H2.3, which indicated the relationship between green human resources management practices and **social performance** at significance level 0.05, and the correlation coefficient is **0.733**.

Additionally, Table 7 shows in detail the relationship between green human resources management practices and sustainable performance dimensions at significance level 0.05.

Regarding the level of significance and magnitude of coefficients as shown in Table 7, the practices T1_2 (**green recruitment & selection), then T1_6 (green employee relations, grievances, and discipline**) are the dimensions most powerfully correlated with other dimensions.

Regression Coefficient Test

Table 8 shows the effect of GHRM practices on sustainable performance dimensions.

Table 7. Spearman correlation coefficient

	T2_1	T2_2	T2_3	T1_1	T1_2	T1_3	T1_4	T1-5	T1-6
T 2 _ 1	1.000								
T 2 _ 2	0.417*** 0.000	1.000							
T 2 _ 3	0.613*** 0.00	0.525*** 0.000	1.000						
T 1 _ 1	0.464*** 0.000	0.668*** 0.000	0.561*** 0.000	1.000					
T 1 _ 2	0.424*** 0.000	0.803*** 0.000	0.683*** 0.000	0.756*** 0.000	1.000				
T 1 _ 3	0.533*** 0.000	0.567*** 0.000	0.718*** 0.000	0.654*** 0.000	0.801*** 0.000	1.000			
T 1 _ 4	0.453** 0.000	0.767*** 0.000	0.719*** 0.000	0.795*** 0.000	0.943*** 0.000	0.793*** 0.000	1.000		
T 1 _ 5	0.727** 0.000	0.665*** 0.000	0.751*** 0.000	0.526*** 0.000	0.634*** 0.000	0.640*** 0.000	0.617*** 0.000	1.000	
T 1 _ 6	0.579** 0.000	0.845 0.000	0.615 0.000	0.712 0.000	0.830 0.000	0.836 0.000	0.834 0.000	0.694 0.000	1.000

** correlation is significant at the 0.051 level (2- tailed)

Table 8. Simple regression analysis of relationship between GHRM practices and sustainable performance

There is no significant effect of green human resources management practices dimensions on sustainable performance	Dependent variable	Regression Coefficients						Pseudo R²	Chi-Square	Degrees of freedom	P–value
		Green job analysis and human resources planning	Green recruitment and selection	Green training and development	Green performance appraisal and compensation system	Green health and safety	Green employee relations, grievances and discipline				
	sustainable performance	7.102***	5.981**	6.116***	2.152	10.529***	6.293***	Cox and Snell 0.796 Nagelkerke 0.972 McFadden 0.931	630.47	6	0.0
p-value for independent variables	**0.000**	**0.052**	**0.000**	**0.278**	**0.000**	**0.000**	**p-value for independent variables**				

It is clear from the previous table that g**reen recruitment and selection and green performance appraisal and compensation system have no significant effect on sustainable performance** at significance level 0.05, as P-value > 0.05. Green human resources management practices that hava significant effect on sustainable performance can be arranged according to their impact on sustainable performance as follows:

The application of green health and safety and green employee relations, grievances and discipline improved the sustainable performance of private hospitals, while the application of green job analysis and HR planning and green training and development led to a decrease in the sustainable performance of these hospitals.

CONCLUSION, IMPLICATIONS, AND LIMITATIONS

This study clarified the relationship between green human resource management practices in improving sustainable performance in Egyptian private hospitals by studying the extent the GHRM practices were implemented in one of the most important public service sectors, the medical sector. The findings showed that GHRM is applied at a moderate level in Egyptian private hospitals; this indicates that the medical sector still needs to pay attention to adapt green practices and preserve the environment and its resources. A positive relationship between GHRM practices and sustainable performance (environmental, economic, and social) was found that supported H2, and the practices most correlated to sustainable performance are green recruitment and selection, then green employee relations, grievances, and discipline. The study also found that green human resources practices that improved the sustainable performance are green health and safety and green employee relations, grievances and discipline, but green job analysis and HR planning, green training and development led to a decrease in sustainable performance. The results also indicated that green recruitment and selection and green performance appraisal and compensation system have no significant effect on sustainable performance in the Egyptian private hospitals. In order to encourage the application of green human resources management practices in healthcare organizations, hospitals should first pay attention to green job analysis and green human resources planning through designing jobs with a concern for the environment and how to manage and protect environmental sustainability and designing green job analysis that helps in planning the organization's need. As for green recruitment and selection, hospitals must attract environmentally concerned workers for their job vacancies. Attracting and selecting employees is carried out based on their degree of knowledge and environmental awareness. Additionally, hospitals should demonstrate concern for green training on resource conservation, recycling and waste management, supporting flexible schedules, and implementing occupational safety and health programs, with the aim of creating environmental awareness and a green culture for workers to improve their concern for sustainability. Private hospitals have financial resources that they can use efficiently to train employees with the aim of increasing their environmental awareness and directing their behavior towards sustainable performance and preserving hospital resources, such as through investing in environmental training alongside medical training, which supports the level of application of green human resources practices in the hospitals. Hospitals

Table 9. Ranking the impact of GHRM practices on sustainable performance

Rank	Dimension	Chance	Effect
1	Green health and safety	**10.529**	Increase
2	Green job analysis and human resources planning	**7.102**	decrease
2	Green employee relations, grievances and discipline	**6.293**	Increase
4	Green training and development	**6.116**	decrease

should also pay attention to green performance appraisal and compensation systems by establishing the Environmental Management Review System (EMIS), implementing environmental auditing processes, and encouraging the disposal of harmful waste, with the aim of controlling the use of the hospitals resources and protecting the environment from pollution, and providing financial and non-financial rewards to employees according to their environmental performance. The support from top management is considered one of the significant factors in implementing GRM practices, so it must set clear and specific standards that guarantee employees' commitment to environmental performance and motivate them by providing benefits and incentives to encourage them to adhere to these standards and participate in innovative green ideas. Hospitals must adhere to the environmental sustainability standards set by the Egyptian Ministry of Planning and Economic Development)2021) in coordination with the Ministry of Environment, which sets standards for the medical sector, represented by green hospitals that rely on green buildings, medical devices free of mercury, and medical supplies free of non-recyclable plastic. The availability of safe disposal devices for medical waste and separation of medical waste are also important considerations for hospitals. The commitment of the top management and all hospital workers to apply these standards is a basic condition for obtaining accreditation from the General Authority for Health Accreditation and Control. The study also showed that there is a moderate correlation between GHRM practices and sustainable performance. This may be due to the fact that private hospitals aim to provide medical service at a high level of quality while taking the profit factor into account more than paying attention to sustainable environmental performance, which is costly. In addition, there is a lack of interest in developing countries for achieving sustainable development. This study also identifies some implications for applying the concept of sustainable performance by evaluating the extent to which GHRM practices are applied in the health care sector in developing countries, especially private hospitals. Their financial resources can contribute to create environmental awareness for their employees through training on sustainable performance, preserving resources, protecting the environment from pollution resulting from wastes, and saving energy. Hospital decision makers must also include green practices for human resources in their strategic decisions and make them among their priorities with the aim of achieving benefits from green practices and spreading green culture among employees, to achieve sustainable performance in the future by improving the quality of medical services provided, preventing the occurrence of waste, and developing sustainable practices.

As this paper focuses on the relationship between GHRM practices in Egyptian private hospitals and sustainable performance, further empirical research should include comparative studies of governmental and private hospitals in applying GHRM practices. This paper concerns one-specific context (Egyptian private hospitals); further research might extend the current research's theoretical framework to examine it across several countries (including developed versus developing countries).

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