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Green Human Resource Management and Environmentally Friendly Behavior of Employees in Iraq's Ministry of Environment

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ABSTRACT

Purpose: This study examines how Green Human Resource Management (GHRM), expressed through green recruitment, green training, green performance appraisal, and green rewards, relates to and influences the environmentally friendly behavior of employees at the Ministry of Environment in Baghdad, Iraq.
Methodology: A descriptive analytical design was used. A questionnaire built on a five point Likert scale was distributed electronically to a convenience sample of 110 employees, and 98 questionnaires were returned. Validity was checked with Pearson item correlations, reliability with Cronbach's alpha, and the hypotheses were tested with Pearson correlation and simple linear regression in SPSS version 27.
Results: All four GHRM dimensions were rated highly, with green performance appraisal ranked first. GHRM correlated strongly and positively with environmentally friendly behavior (r=0.673) and had a significant effect on it (B=0.752, F=77.079, R^2=0.453). Green training and green rewards were the strongest individual dimensions.
Conclusions: Green HR practices, particularly training and rewards, give the ministry a practical way to steer employees toward greener behavior at work.
Limitations: The study relied on a single public organization, a small convenience sample, cross sectional self reported data, and bivariate analysis.
Contributions: The study adds evidence from an Iraqi public sector setting, where GHRM research is still scarce, and offers managers concrete steps such as environmentally oriented job descriptions and incentives for employees who propose ways to reduce waste.

Keywords: *Environmentally Friendly Behavior, Green Human Resource Management, Green Training, Ministry of Environment, Public Sector*

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1. Introduction

The natural environment is under heavy pressure because resources are being used up faster than they can recover and are often used wastefully. The consequences go beyond scarcity. Waste volumes keep rising, pollution spreads, and the cost of treating waste climbs, while health and psychological problems follow close behind. A large share of this waste and misuse is tied to how people behave at work, what they know, and what skills they bring to their jobs. This has pushed organizations to rethink how they develop employee behavior and how they can steer it toward environmental sustainability. One of the ideas that has gained the most attention in this effort is Green Human Resource Management (GHRM). It places environmentally friendly behavior near the top of the agenda by building it into recruitment and training, carrying it through an employee's working life, and making it a criterion in performance appraisal and reward systems (Ren, Tang, & Jackson, 2018; Tang, Chen, Jiang, Paillé, & Jia, 2018). When HR practices are designed this way, they can help employees rethink the demands of their jobs, find more meaning in their work, and build the skills needed for sustainable practice.

Sustainability and environmental protection now shape many of the decisions that individuals and organizations make when they try to create value. Studies have shown that companies with green policies can encourage positive behavior among their employees and can even attract new customers (Jamal, Zahid, Martins, Mata, Rahman, & Mata, 2021). Employees are therefore key stakeholders in carrying out green policies, and organizations need to invest enough to make them care about green behavior and take part in the organization's environmental goals. Practices such as green training, incentives for green practices at work, and the inclusion of green behavior in performance appraisal are widely seen as a sound route to environmental sustainability. These practices improve how employees think and act at work, including their attitudes toward the environment, their environmental self efficacy, and their environmental performance on the job (Dumont, Shen, & Deng, 2017).

Environmentally friendly behavior does not appear by chance. People learn it, and HR management can instill it through job descriptions, training, and encouragement. Yet HR management can only play this role when its direction, mission, and goals are themselves oriented toward environmental improvement, which is exactly what the term Green Human Resource Management describes (Amrutha & Geetha, 2020). This matters a great deal for public bodies whose very mandate is environmental protection. A ministry of environment that asks citizens and businesses to behave responsibly is expected to show the same standard internally, and its employees are the cornerstone of that standard.

Despite rapid growth in GHRM research, most empirical work has focused on hotels, manufacturing firms, banks, and universities in Asia and Europe (Yong, Yusliza, Ramayah, Sehnem, & Mani, 2020). Evidence from public institutions in the Arab region, and from Iraq in particular, remains limited, and few studies have looked at government agencies whose core mission is environmental (Ly, 2023). This study addresses that gap by examining the role of GHRM in promoting environmentally friendly behavior, the extent to which GHRM practices are applied in the Iraqi Ministry of Environment, and the contribution of each GHRM dimension to the environmentally friendly behavior of the ministry's employees. Accordingly, the study aims to review the theoretical basis of GHRM and environmentally friendly behavior, describe the current state of GHRM in the ministry, measure the relationship and effect of GHRM on environmentally friendly behavior, and identify the behaviors that employees practice most and least often. The findings are expected to help the ministry give greater attention to green HR practices and to add to the Iraqi and Arab literature on the subject.

2. Literature Review and Hypothesis/es Development

2.1 Green Human Resource Management

The Industrial Revolution brought a sharp rise in production as industries expanded and diversified. That growth came with serious pollution, depletion of natural resources, and the spread of disease. In response, many organizations and governments introduced initiatives and concepts meant to

protect the environment and reduce pollution risks, and GHRM is one of them. Growing public awareness of climate change and pollution has raised expectations that organizations and governments will respond to the environmental crisis, and many stakeholders now demand more effective protective measures (Tanova & Bayighomog, 2022). GHRM has thus become one of the concepts that support environmental management in contemporary organizations in line with sustainable development. It encourages HR management to adopt behaviors that support the environment and, in doing so, contributes to sustainable organizational performance (Ren, Tang, & Jackson, 2018).

GHRM can be defined as the practices and policies that HR management adopts to support the environment, encourage strong performance, reduce costs, and raise employee engagement within the organization. Review studies describe it as the set of HR activities through which an organization develops the green abilities of its workforce, motivates green effort, and creates opportunities for employees to take part in environmental initiatives (Ren et al., 2018).

Putting GHRM into practice is not easy. Kamal (2025) describe several obstacles. Organizations may need to redesign their structures, which shifts authorities, responsibilities, and tasks. Employees may resist change because they do not see the benefits of GHRM. Green performance appraisal is difficult because precise standards for judging green behavior are often missing. Many organizations lack technical knowledge and need time to move toward green HR practices and build a new green culture. Training employees in green work skills can be costly, and building and sustaining a green culture takes considerable time and effort when general awareness is low. Finally, government bodies often know little about the advantages of GHRM, and because these bodies are influential stakeholders, legal and regulatory support is needed to ease implementation. Interview evidence from the hospitality sector points to similar barriers, including limited knowledge and guidance, budget pressure, and the need for both top down and bottom up approaches (Tanveer, Yusliza, & Fawehinmi, 2024).

2.2 Practices and Dimensions of Green Human Resource Management

GHRM brings together core practices such as green recruitment and selection, green training, compensation and rewards, and employee involvement. Its role is to develop environmentally friendly standards and practices inside the organization and to supply the components needed to achieve organizational sustainability (Jamal, Zahid, Martins, Mata, Rahman, & Mata, 2021). Several researchers, including Gomes, Sabino, and Antunes (2023) identify the most important dimensions as green recruitment, green training, green performance management and appraisal, and green rewards. Validated measurement scales have been built around much the same set of practices (Shah, 2019; Tang, Chen, Jiang, Paillé, & Jia, 2018). This study adopts four of these dimensions.

Green recruitment aims to attract people whose environmental values and beliefs match those of the organization, so that they can become an active force for green behavior. The organization can also apply green principles in the recruiting process itself, for example by advertising vacancies through social media, which is cheap and widely accessible, and by holding interviews online, which saves money, paper, time, and effort.

Green training develops employees' skills and behaviors and raises their awareness of why environmental protection matters. Through training, employees learn how to cut waste, save energy, and apply environmentally friendly methods. Organizations should therefore offer environmental management training that helps staff understand how to protect the environment and use resources wisely, because training strengthens environmentally friendly behavior (Fawehinmi, Yusliza, Mohamad, & Muhammad, 2020).

Green performance appraisal means setting clear green indicators for evaluating employees and actually applying them. Such indicators encourage employees to improve their performance in line with environmental targets, develop their skills, and earn promotion. Appraisal also involves regular comparisons to correct deviations, along with penalties and firm rules that secure compliance with environmental regulations. Green rewards recognize and motivate employees for better environmental performance. A green reward system that uses both financial and nonfinancial

rewards is an effective way to strengthen environmental management activities and to encourage employees to protect the environment through recognition and appreciation (Saeed, Afsar, Hafeez, Khan, Tahir, & Afridi, 2019).

2.3 Environmentally Friendly Behavior

When employees care about environmental problems, they contribute their environmental skills and abilities and often go beyond their formal duties. This gives rise to environmentally friendly behavior, which can be defined as the willing or intentional behavior of an employee that protects the environment from the negative effects of human activity. It covers activities that help achieve green goals within organizational constraints, such as saving water, reducing the carbon footprint, recycling, preserving natural resources, working without paper, using less plastic, and minimizing waste (Gill, Ahmad, & Kazmi, 2021).

Employees who understand their role in protecting the environment are more inclined to adopt practices that improve their organization's environmental results. Organizations therefore need to cultivate these behaviors by helping employees make the most of resource conservation initiatives and by involving them actively in environmental activities. Environmental behavior also spreads socially. When employees see colleagues saving resources, a shared expectation forms that everyone in the group should do the same. Collective participation increases individual commitment and strengthens the organization's ability to sustain environmentally friendly practices, and when people can see the benefits of a commitment to sustainability and receive support from peers, most of them begin to act green (Junejo, Saraih, Ejaz, Ejaz, & Hossain, 2025).

Employee environmental behavior refers to intentional actions that have a positive effect on the environment, reduce the impact of human activity, and move the organization toward sustainability. These behaviors fall into two types. Task related green behavior is carried out within organizational requirements and is formally part of the job description, while voluntary green behavior is initiated by the employee and goes beyond what the organization expects (Ribeiro, Gomes, Ortega, & Semedo, 2022; Katz, Rauvola, Rudolph, & Zacher, 2022). Green behaviors can therefore be job related or extend beyond the boundaries of work tasks, and Francoeur, Paillé, Yuriev, and Boiral (2021) organize them into the categories shown in Table 1.

Table 1. Classification of green workplace behaviors

No.	Main Category	Subcategory	Examples
1.	Conserving	Recycling	Recycling cans, bottles, and paper
		Reusing	Reusing single use products, food products, and paper
		Reducing consumption	Turning off lights and printing on both sides of the paper
		Repurposing	Using modern waste incinerators to heat buildings
2.	Avoiding harm	Pollution	Preventing and reducing pollution
		Monitoring environmental impact	Monitoring emissions from operations
		Enhancing ecosystems	Preserving wildlife areas around work facilities
3.	Transforming	Choosing responsible alternatives	Buying reusable equipment or supplies and using environmentally friendly products
		Changing how work is done	Improving shipping programs to reduce air shipments

No.	Main Category	Subcategory	Examples
3.	Transforming	Innovating sustainable products and processes	Designing new products and developing new manufacturing processes
		Adopting innovations for sustainability	Choosing virtual meetings over travel and buying hybrid vehicles for the company
4.	Influencing others	Education and training for sustainability	Appointing a sustainability education coordinator and sharing ideas about workplace pollution with team members
		Encouraging and supporting others	Encouraging others to protect nature
5.	Taking initiative	Launching programs and policies	Starting a new environmental program and taking the lead in working in environmentally friendly ways
		Lobbying and activism	Joining campaigns, influencing others, and advocating on environmental issues
		Putting environmental interests first	Not using air conditioning and lowering the heating temperature

Table 1 shows that green behavior at work is much broader than recycling or switching off lights. Francoeur et al. (2021) group it into five families. Conserving covers the everyday acts of recycling, reusing, reducing consumption, and finding new uses for materials. Avoiding harm covers preventing pollution, tracking emissions, and protecting the ecosystems around work sites. Transforming refers to changes in how work itself is done, from choosing greener supplies to redesigning products, processes, and travel. Influencing others captures the social side of green behavior, such as educating colleagues and encouraging them to protect nature, and taking initiative covers the most proactive forms, such as launching new programs, joining campaigns, and putting environmental interests ahead of personal comfort. The classification is useful for this study because it shows that some green behaviors are routine and fairly easy, while others demand effort, creativity, or influence over others. It also explains why the questionnaire used here mixes items on conserving materials, water, and energy with items on the organization's efforts to raise awareness, since both individual and collective forms of behavior belong to the same domain.

2.4 Factors Influencing Environmentally Friendly Behavior

Studies byKatz, Rauvola, Rudolph, and Zacher (2022) and Ateş (2020) show that several factors encourage environmentally friendly behavior. A green organizational culture paves the way for sustainable practices and better environmental results, and environmentally friendly behavior does not work in isolation from that culture (Ak, Türkmenoğlu, Elbardan, & Yüce, 2025). A green work environment encourages employees to use resources efficiently, manage waste sensibly, and favor clean and renewable energy. Green work discipline builds a culture in which employees are expected to follow sustainable practices, and commitment of this kind raises satisfaction, performance, and productivity.

Psychological factors matter as well. Perceived behavioral control grows when social traditions and attitudes support a behavior, so a behavior that is widely encouraged is more likely to be adopted (Conner, 2020). Personal norms, understood as a sense of moral obligation to act or refrain from acting, push people with strong environmental norms to behave in environmentally friendly ways. Social pressure from reference groups such as friends, relatives, coworkers, and family also shapes behavior, and the more encouragement a person receives from the group, the more committed that person becomes. Environmental values, which act as guiding principles in people's lives, lead individuals to attach importance to nature and to treat green behavior as a moral commitment (Ruepert, Keizer, Steg, Maricchiolo, Carrus, Dumitru, Stancu, & Moza, 2016; Ateş, 2020).

2.5 Green Human Resource Management and Environmentally Friendly Behavior

GHRM practices shape employees' ability and motivation to pursue green goals and give them opportunities to do so. Training builds green capabilities, green performance management motivates effort, and employee involvement creates room for participation. Together, these practices help employees contribute effectively to environmental sustainability (Hameed, Khan, Islam, Sheikh, & Naeem, 2020). GHRM also promotes a greener workplace by involving employees in green suggestion schemes and giving them feedback, while regular training and rewards raise awareness of waste disposal, conservation, and recycling (Gill, Ahmad, & Kazmi, 2021). Hiring people who are environmentally aware, involving them in green initiatives, and training them are likely to improve their environmental knowledge, skills, and awareness and make them more ready to act green (Ribeiro, Gomes, Ortega, & Semedo, 2022). Empirical studies confirm these links in different settings and point to mechanisms such as psychological green climate, green values, work engagement, and organizational identification (Dumont, Shen, & Deng, 2017; Chaudhary, 2020; Aboramadan, 2022; Ababneh, 2021; Ansari, Farrukh, & Raza, 2021; Zhang, Luo, Zhang, & Zhao, 2019).

Recent studies from the Arab region and elsewhere point the same way. Abdelwahab (2024) surveyed 372 respondents in Egyptian commercial banks and found a strong relationship between GHRM practices and organizational performance. Naematallah and Zaki (2025) studied 386 employees of green hotels in Sharm El Sheikh and reported that the GHRM dimensions significantly affected performance. Moustafa and Montaser (2024) surveyed 371 employees and found that GHRM influenced perceived green organizational support and improved employees' green behavior both inside and outside the workplace, and that perceived support itself shaped green behavior. Ly (2023) surveyed 396 government employees in Cambodia and found that GHRM improved organizational commitment and green behavior in public organizations, with commitment partially mediating the relationship. Tanveer, Yusliza, and Fawehinmi (2024) interviewed six senior HR managers and identified challenges that include limited knowledge and awareness, the place of social responsibility in strategy, the need for comprehensive internal approaches, budget constraints, and the HR department's responsibility for building competence. Ak, Türkmenoğlu, Elbardan, and Yüce (2025) studied 572 employees and managers of four and five star hotels in Antalya and showed that responsible leadership improved environmental performance and green culture and that eco friendly behavior strengthened the effect of green culture on environmental outcomes.

2.6 Research Framework and Hypotheses

Building on the research problem, objectives, and literature reviewed above, the study proposes the framework shown in Figure 1. GHRM, measured through four dimensions, is expected to correlate with and affect environmentally friendly behavior among employees of the Ministry of Environment.

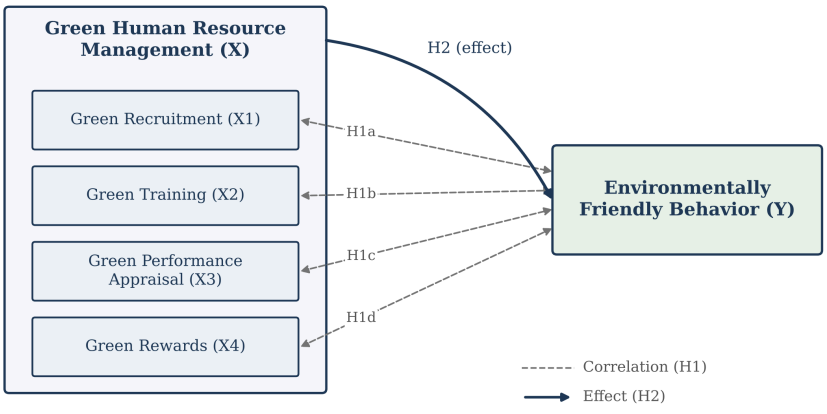


Figure 1. Hypothetical research framework

Figure 1 summarizes the logic of the study. On the left, GHRM is treated as a bundle of four practices, namely green recruitment, green training, green performance appraisal, and green rewards. On the right sits environmentally friendly behavior, the outcome the ministry hopes to strengthen among its staff. The dashed lines represent the first main hypothesis and its four sub hypotheses, which state that each GHRM dimension is correlated with environmentally friendly behavior. The solid curved arrow represents the second main hypothesis, which states that GHRM as a whole, together with its dimensions, has a significant effect on that behavior. The framework reflects the ability, motivation, and opportunity view that runs through the GHRM literature (Ren, Tang, & Jackson, 2018;Hameed, Khan, Islam, Sheikh, & Naeem, 2020), in which recruitment and training mainly build ability, appraisal and rewards mainly drive motivation, and the combined system shapes the behavior employees display at work.

H_1: There is a statistically significant correlation between GHRM, with its four dimensions, and environmentally friendly behavior among employees of the Ministry of Environment.

H_1a: There is a statistically significant correlation between green recruitment and environmentally friendly behavior.

H_1b: There is a statistically significant correlation between green training and environmentally friendly behavior.

H_1c: There is a statistically significant correlation between green performance appraisal and environmentally friendly behavior.

H_1d: There is a statistically significant correlation between green rewards and environmentally friendly behavior.

H_2: GHRM, with its dimensions, has a statistically significant effect on environmentally friendly behavior among employees of the Ministry of Environment.

3. Research Methodology

3.1 Research Design, Population, and Sample

The study used a descriptive analytical design and was carried out as a field study in the Ministry of Environment in Baghdad, Iraq. The population consisted of the ministry's employees. A convenience sample of 110 employees was selected, and the questionnaire was distributed to them electronically. A total of 98 questionnaires were returned and used in the analysis.

3.2 Research Instrument

Data were collected with a questionnaire rated on a five point Likert scale ranging from strongly disagree to strongly agree. GHRM was measured with twelve items, three for each of its four dimensions, covering green recruitment, green training, green performance appraisal, and green rewards. Environmentally friendly behavior was measured with nine items covering the organization's efforts to raise environmental awareness and employees' own practices, such as saving materials, watching for water leaks, and switching off electrical devices. The items were adapted from the GHRM and green behavior literature (Tang, Chen, Jiang, Paillé, & Jia, 2018; Shah, 2019; Francoeur, Paillé, Yuriev, & Boiral, 2021).

3.3 Data Analysis

The data were processed with the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics, namely frequencies, percentages, weighted arithmetic means, standard deviations, and relative importance, were used to describe the responses and to rank the dimensions and items. Relative importance was obtained by dividing the mean by the maximum scale value of five. Internal consistency validity was examined with the Pearson correlation between each item and the total score of its dimension, and reliability was assessed with Cronbach's alpha (Taber, 2018). The first main hypothesis was tested with Pearson correlation coefficients, and the second was tested with simple linear regression.

4. Results and Discussions

4.1 Internal Consistency Validity

Pearson correlation was used to check the internal consistency of the instrument, that is, how well each item relates to the total score of the dimension it belongs to. This analysis shows whether the items hang together and measure the intended environmental practices without overlapping or drifting away from them. The coefficients and their significance levels are reported in Tables 2 and 3.

Table 2. Internal consistency of the Green Human Resource Management items

No.	Item	Correlation	*p* value
Green Recruitment			
1.	My organization recruits candidates who possess environmental values, knowledge, and awareness.	0.728	0.000
2.	My organization uses electronic job applications to reduce costs and paper waste.	0.748	0.000
3.	My organization conducts job interviews electronically to reduce costs, congestion, and pollution.	0.583	0.000
Green Training			
1.	My organization provides environmental training programs to develop employees' environmental skills and behaviors.	0.737	0.000
2.	Training courses are conducted electronically to reduce transportation and hospitality costs.	0.750	0.000
3.	The training plan includes educational programs on green sustainability.	0.705	0.000
Green Performance			
1.	My organization evaluates employees' environmental behaviors as part of the performance management process.	0.778	0.000
2.	The organization's management establishes specific criteria for evaluating sustainable environmental practices.	0.757	0.000
3.	My organization uses electronic performance appraisal systems that support environmental sustainability.	0.795	0.000
Green Rewards			
1.	My organization rewards employees for their environmentally friendly behavior.	0.676	0.000
2.	My organization provides incentives for voluntary activities that support the environment.	0.720	0.000
3.	My organization's management recognizes community initiatives that support the green orientation.	0.766	0.000

Table 2 shows that every item of the independent variable has a strong positive correlation with the dimension it belongs to. The lowest coefficient is 0.583 for the green recruitment item on conducting job interviews electronically, and the highest is 0.795 for the green performance item on electronic appraisal systems that support environmental sustainability. All other coefficients fall between these two values, and most are above 0.70. Every item is significant at p=0.000, well below the accepted threshold of $\alpha \leq 0.05$. These results show that the GHRM part of the questionnaire has high validity and internal consistency. In practical terms, each of the three items in every dimension pulls in the same direction as the dimension as a whole, none of them appears to

be measuring something unrelated, and the instrument can therefore be used with confidence to collect and analyze field data without concern about scattered or inaccurate responses.

Table 3. Internal consistency of the environmentally friendly behavior items

No.	Item	Correlation	*p* value
1.	My organization makes concerted efforts to ensure that every employee understands the importance of protecting the environment.	0.568	0.001
2.	My organization encourages its employees to adopt more environmentally conscious behaviors.	0.593	0.001
3.	I conserve the materials used in the workplace.	0.708	0.001
4.	I pay close attention to water leaks.	0.681	0.001
5.	I consider adhering to deadlines when completing tasks to be of great importance.	0.531	0.001
6	I maintain a good level of attendance at work.	0.700	0.001
7.	Use of environmentally friendly goods and services.	0.536	0.001
8.	I use materials at work economically.	0.748	0.001
9.	I turn off electrical devices after completing work when leaving the room.	0.629	0.001

Table 3 supports the structural consistency of the environmentally friendly behavior items. All correlation coefficients are positive and meaningful, ranging from 0.531 for the item on the importance of meeting deadlines to 0.748 for the item on using materials at work economically. This balanced spread shows a solid link between the individual items and the variable as a whole. The significance level is 0.001 for every item, well below $\alpha \leq 0.05$, so the correlations are significant at the 0.01 level. Items that describe personal conservation habits, such as saving materials, keeping good attendance, and using materials economically, show the strongest links with the total score, while items about deadlines and the use of green goods and services show somewhat weaker but still acceptable links. This confirms that the environmentally friendly behavior scale is reliable and that the respondents' answers can be used for further statistical analysis and for drawing conclusions with confidence.

4.2 Reliability of the Instrument

Reliability testing shows whether an instrument would produce consistent results if it were applied again to the same group under the same conditions, which gives it the precision needed to measure behavioral and administrative phenomena. Cronbach's alpha was used for this purpose because it is the most common measure of internal consistency in the management literature (Taber, 2018). A coefficient of at least 0.60 is generally considered acceptable for exploratory field studies. The overall coefficient obtained from the field data was 0.877, a high value that exceeds the recommended level. The instrument can therefore be regarded as stable and ready for field use, and the conclusions drawn from it can be treated as credible.

4.3 Description of Green Human Resource Management

This section describes how far the research variables are adopted and applied in the ministry, based on the weight of the answers given by the surveyed employees. Each variable is broken down into its dimensions and items to give a clear picture of current green HR practice and of its strengths and weaknesses. Table 4 presents the frequencies, percentages, arithmetic means, standard deviations, and relative importance for GHRM and its dimensions.

Table 4. Description of the Green Human Resource Management variable

Item	SD f (%)	D f (%)	N f (%)	A f (%)	SA f (%)	Mean	Std. Dev.	RI
Green Recruitment								
My organization recruits candidates who possess environmental values, knowledge, and awareness.	1 (1.1)	1 (1.1)	3 (3.2)	57 (60.0)	33 (34.7)	4.26	0.672	85.20%
My organization uses electronic job application methods to reduce costs and paper waste.	2 (2.1)	1 (1.1)	4 (4.2)	50 (52.6)	38 (40.0)	4.27	0.778	85.40%
Electronic recruitment interviews are conducted to reduce costs, congestion, and pollution.	0 (0.0)	4 (4.2)	2 (2.1)	39 (41.1)	50 (52.6)	4.42	0.738	88.40%
Total						4.31	0.500	86.20%
Green Training								
My organization provides environmental training programs to develop employees' environmental skills and behaviors.	1 (1.1)	0 (0.0)	6 (6.3)	46 (48.4)	42 (44.2)	4.35	0.696	87.00%
Training courses are conducted electronically to reduce transportation and hospitality costs.	0 (0.0)	0 (0.0)	9 (9.5)	51 (53.7)	35 (36.8)	4.27	0.626	85.40%
The training plan includes educational programs on green sustainability.	0 (0.0)	1 (1.1)	5 (5.3)	44 (46.3)	25 (47.4)	4.40	0.642	88.00%
Total						4.34	0.478	86.80%
Green Performance								
My organization evaluates employees' environmental behaviors as part of the performance management process.	0 (0.0)	0 (0.0)	4 (4.2)	50 (52.6)	41 (43.2)	4.39	0.570	87.80%
The organization's management establishes specific criteria for evaluating sustainable environmental practices.	0 (0.0)	1 (1.1)	4 (4.2)	49 (51.6)	41 (3.2)	4.37	0.620	87.40%
My organization uses electronic performance appraisal programs that support the preservation of the sustainable environmental dimension.	0 (0.0)	0 (0.0)	4 (4.2)	51 (53.7)	40 (42.1)	4.38	0.568	87.60%
Total						4.371	0.455	87.42%
Green Rewards								
My organization rewards employees for their environmental behavior.	0 (0.0)	1 (1.1)	3 (3.2)	53 (55.8)	38 (40.0)	4.35	0.597	87.00%
My organization provides incentives for voluntary activities that support the environment.	0 (0.0)	0 (0.0)	3 (3.2)	50 (52.6)	42 (44.2)	4.41	0.555	88.20%
The organization's management recognizes community initiatives that support the green orientation.	0 (0.0)	1 (1.1)	7 (7.4)	48 (50.5)	39 (41.1)	4.32	0.657	86.40%
Total						4.35	0.435	87.00%

Table 4 shows a very positive evaluation and strong agreement among respondents about how far GHRM practices are adopted in the ministry. The dimension means range from 4.31 for green recruitment to 4.371 for green performance, and the relative importance of all four dimensions exceeds 86%. This reflects a high level of environmental awareness at the institutional level.

Looking at the dimensions individually, green performance ranked first, with a relative importance of 87.42%, a mean of 4.371, and a standard deviation of 0.455, which indicates highly consistent responses. Green rewards came next, with a relative importance of 87.00% and a mean of 4.35, followed by green training, with a relative importance of 86.80% and a mean of 4.34. Although green recruitment still scored high, it ranked fourth and last, with a mean of 4.31 and a relative importance of 86.20%. At item level, the highest rated statement in the whole table was the green recruitment item on electronic interviews (mean 4.42, 88.40%), while the lowest was the green recruitment item on hiring candidates with environmental values (mean 4.26, 85.20%), which helps

explain why recruitment ended up last despite one strong item. Taken together with standard deviations that are generally low and all below 1, this profile shows that the ministry has a fertile and stable base for building HR practices that support environmental protection and improve environmentally friendly behavior.

4.4 Description of Environmentally Friendly Behavior

Table 5 presents the frequencies, percentages, arithmetic means, standard deviations, and relative importance for the items of environmentally friendly behavior. These figures provide an objective picture of the extent of positive environmental practice in the workplace and show where behavior is strong and where gaps remain.

Table 5. Description of the environmentally friendly behavior variable

Item	SD f (%)	D f (%)	N f (%)	A f (%)	SA f (%)	Mean	Std. Dev.	RI
My organization makes concerted efforts to ensure that every employee understands the importance of environmental protection.	0 (0.0)	1 (1.1)	3 (3.2)	40 (42.1)	51 (53.7)	4.48	0.616	89.60%
My organization encourages its employees to adopt more environmentally conscious behaviors.	1 (1.1)	1 (1.1)	2 (2.1)	46 (48.4)	45 (47.4)	4.40	0.690	88.00%
I conserve the materials used in my work.	0 (0.0)	3 (3.2)	7 (7.4)	46 (48.4)	39 (41.1)	4.27	0.736	85.40%
I pay close attention to water leaks.	0 (0.0)	0 (0.0)	3 (3.2)	48 (50.5)	44 (46.3)	4.43	0.558	88.60%
I consider adhering to deadlines for completing tasks to be of great importance.	0 (0.0)	0 (0.0)	1 (1.1)	43 (45.3)	51 (53.7)	4.53	0.523	90.60%
I maintain a good level of attendance at work.	0 (0.0)	0 (0.0)	6 (6.3)	49 (51.6)	40 (42.1)	4.36	0.600	87.20%
Use of environmentally friendly goods and services.	0 (0.0)	1 (1.1)	2 (2.1)	45 (47.4)	47 (49.5)	4.45	0.597	89.00%
I use materials economically in my work.	0 (0.0)	1 (1.1)	9 (9.5)	49 (51.6)	36 (37.9)	4.26	0.672	85.20%
I turn off electrical devices after finishing work when leaving the room.	0 (0.0)	1 (1.1)	9 (9.5)	49 (51.6)	36 (37.9)	4.45	0.665	89.00%
Total						4.404	0.399	88.08%

Table 5 shows a positive response and a very high level of agreement among respondents about environmentally friendly behavior in the ministry. The variable as a whole has an overall mean of 4.404, which places it at an advanced level within the high acceptance range, and an overall relative importance of 88.08%. The low overall standard deviation of 0.399 confirms that respondents' views are homogeneous and closely aligned, without notable dispersion.

At item level, the statement on the importance of meeting deadlines for completing tasks ranked first, with the highest mean of 4.53, a relative importance of 90.60%, and a very low standard deviation of 0.523, which makes it stand out in the behavioral focus of respondents. The statement that the organization makes concerted efforts to ensure that every employee understands the importance of environmental protection came second, with a mean of 4.48 and a relative importance of 89.60%. Although all items were rated highly, the statement on using materials economically at work had the lowest mean, 4.26, and the lowest relative importance, 85.20%. Overall, these results show that the ministry's employees have a strong personal commitment and a genuine behavioral orientation toward environmental sustainability, which is a valuable asset for any green strategy that management decides to pursue.

4.5 Testing the First Main Hypothesis

The first main hypothesis states that there is a statistically significant correlation between GHRM, with its four dimensions, and environmentally friendly behavior. Pearson correlation coefficients were calculated to establish the nature, strength, and direction of the relationship between the independent variable and its dimensions on one side and the dependent variable on the other. The results are summarized in Table 6.

Table 6. Results of the correlation test for the first main hypothesis

Relationship	Pearson Correlation	Sig.	Result
Green recruitment and environmentally friendly behavior	0.499**	0.001	Significant
Green training and environmentally friendly behavior	0.565**	0.001	Significant
Green performance and environmentally friendly behavior	0.443**	0.001	Significant
Green rewards and environmentally friendly behavior	0.564**	0.001	Significant
GHRM and environmentally friendly behavior	0.673**	0.001	Significant

Table 6 provides sufficient evidence to support the first main hypothesis. The overall correlation coefficient of 0.673 shows a strong positive relationship between GHRM as a whole and environmentally friendly behavior. The significance level of 0.001 is far below the accepted threshold of $\alpha \leq 0.01$, which makes the result statistically robust. In other words, improvements in green HR practices go hand in hand with clear improvements in employees' environmental behavior. At the level of individual dimensions, green training shows the strongest correlation (0.565), followed very closely by green rewards (0.564), which suggests that environmental development and incentive systems play a major role in shaping how employees behave. Green recruitment ranks third with a positive coefficient of 0.499, and green performance has the lowest coefficient, 0.443, although its relationship is still positive and clearly significant. Because every coefficient is positive and significant, sub hypotheses H_1a, H_1b, H_1c, and H_1d are all supported, and the first main hypothesis is accepted in full. This gives management a solid strategic basis for investing in green practices as a necessary step toward more sustainable behavior.

4.6 Testing the Second Main Hypothesis

The second main hypothesis states that GHRM, with its dimensions, has a statistically significant effect on environmentally friendly behavior. Simple linear regression was used to estimate the effect coefficients and to determine how much of the variation in the dependent variable is explained by the independent variable and each of its dimensions. The results are shown in Table 7.

Table 7. Results of the regression test for the second main hypothesis

Model	*B*	Std. Error	*F*	R^2	Adjusted R^2	Std. Error of the Estimate	Sig.
Green recruitment	0.399	0.072	30.874	0.249	0.241	0.34839	0.000
Green training	0.472	0.071	43.664	0.320	0.312	0.33168	0.000
Green performance	0.382	0.082	21.627	0.189	0.180	0.36217	0.000
Green rewards	0.518	0.079	43.468	0.319	0.311	0.33192	0.000
GHRM	0.752	0.086	77.079	0.453	0.447	0.29732	0.000

Table 7 fully supports the second main hypothesis. The F value for GHRM as a whole is high, at 77.079, and its significance level is below 0.001, well under the threshold of $\alpha \leq 0.01$. This confirms that the regression model explains the dependent variable efficiently and that the overall effect is statistically significant. The coefficient of determination for the overall model is 0.453, with an adjusted value of 0.447, meaning that GHRM explains 45.3% of the variation in employees' environmental behavior, while the remaining variation is due to factors outside the current model. The effect coefficient of 0.752 indicates that a one unit increase in GHRM practices is associated with a 0.752 increase in environmentally friendly behavior.

Among the individual dimensions, green training has the strongest explanatory power, with F=43.664 and R^2=0.320, meaning that the training system alone explains 32% of employees' environmental behavior, with an effect coefficient of 0.472. Green rewards comes a very close

second, with F=43.468 and R^2=0.319, explaining 31.9% of the dependent variable, and it has the largest effect coefficient of the four dimensions, B=0.518. Green recruitment ranks third, with F=30.874 and an explanatory contribution of 24.9%. Green performance has the weakest effect, although it remains statistically significant, with F=21.627 and an explanatory power of 18.9%. Given the consistency of these results and the low standard errors of the estimates, the second main hypothesis is accepted in full. Management therefore has scientific evidence that green HR policy is the starting point for guiding and influencing employees' positive environmental behavior.

4.7 Discussion

The results point to a clear and consistent picture. GHRM in the Ministry of Environment is rated highly, employees report strong environmentally friendly behavior, and the two are closely linked. The strong overall correlation and the substantial share of variance explained by GHRM agree with studies that found green HR practices to be a major driver of employee green behavior in hotels, universities, and manufacturing firms (Kim, Kim, Choi, & Phetvaroon, 2019), and with the meta analytic evidence that organizational factors are among the most important predictors of green behavior at work (Katz, Rauvola, Rudolph, & Zacher, 2022). The finding also extends the work of Ly (2023) on public organizations in Cambodia, showing that a similar pattern holds in an Iraqi government ministry.

The leading role of green training is consistent with the view that training builds the knowledge and skills that employees need before they can behave in greener ways, and that its effects can even extend to behavior outside work (Pham, Tučková, & Jabbour, 2019). The strength of green rewards, which has the largest effect coefficient, supports research showing that recognizing and rewarding green effort motivates employees to keep acting in environmentally friendly ways (Ansari, Farrukh, & Raza, 2021). Green performance received the highest descriptive rating yet had the weakest correlation and effect. One reading of this gap is that appraisal criteria, however well established on paper, influence behavior less directly than incentives and training do. Green recruitment ranked last descriptively, which suggests that environmental values are not yet built firmly into hiring, even though the ministry already uses electronic recruitment channels. These patterns echo the barriers discussed by Tanveer, Yusliza, and Fawehinmi (2024) and Kamal (2025), particularly the difficulty of setting precise green appraisal standards and embedding environmental values in HR processes.

At the behavioral level, the high ratings for meeting deadlines and for the organization's awareness efforts, together with the relatively low rating for economical use of materials, suggest that employees respond well to organizational expectations but that some resource saving habits need more attention. This is in line with the distinction between task related and voluntary green behavior (Francoeur, Paillé, Yuriev, & Boiral, 2021) and with the view that a supportive green culture and peer example help turn awareness into everyday conservation (Ak, Türkmenoğlu, Elbardan, & Yüce, 2025; Junejo, Saraih, Ejaz, Ejaz, & Hossain, 2025).

5. Conclusions

5.1 Conclusion

This study examined the relationship between GHRM and environmentally friendly behavior among employees of the Ministry of Environment in Baghdad. Among the GHRM dimensions, green performance ranked first, followed by green rewards and green training, while green recruitment ranked last, indicating that environmental values are not yet firmly applied in candidate screening. On the behavioral side, meeting deadlines and the ministry's efforts to build environmental awareness received the highest ratings, showing that employees act on ethical commitment and follow management's green direction, whereas economical use of materials ranked lowest and represents the main behavioral gap requiring intervention. GHRM showed strong explanatory power over environmentally friendly behavior. Green training was the strongest individual predictor, and green rewards had the largest effect coefficient, suggesting that linking incentives to environmental goals is highly effective in sustaining green behavior. Green performance had the weakest effect, implying that appraisal criteria influence actual behavior less directly than training and rewards

5.2 Research Limitations

Several limitations should be kept in mind. The study covered a single ministry in one city, so the findings may not apply directly to other public bodies or to the private sector. The sample was a convenience sample of modest size, which limits generalization. The data were cross sectional and self reported, so common method bias and social desirability may have inflated the ratings, and causal claims cannot be made with certainty. The hypotheses were tested with bivariate correlation and simple regression, which do not control for other variables or the overlap among GHRM dimensions. Some behavior items, such as meeting deadlines and maintaining attendance, also reflect general work discipline rather than environmental behavior in the narrow sense.

5.3 Suggestions and Directions for Future Research

For the ministry, several practical steps follow from the results. To address the weakness in green recruitment, job descriptions for all vacancies should be updated to state clear environmental requirements and expectations, and behavioral tests or interviews should be used to gauge candidates' sustainability values and their tendency toward environmentally responsible practices before they are hired. To build on green performance and green rewards, the existing performance tracking system can be turned into a smart dashboard that follows the daily environmental impact of employees and departments, and exceptional material rewards, such as awards, and nonmaterial rewards, such as a Green Employee title, can be extended to those who come up with ideas to reduce waste. Green training should include compulsory programs for all new staff on environmental agility skills and office recycling, along with regular workshops where employees share experience and practical examples of improving work quality while saving resources.

The ministry can also support self initiated projects by giving staff freedom and delegated authority to reorganize their offices to save energy and resources and by encouraging employee led volunteer teams that build a digital environmental culture and eliminate paper based transactions. To close the behavioral gap in the economical use of materials, an internal awareness campaign focused specifically on this behavior should be launched, supported by visual guides placed around the organization. More broadly, GHRM practices should be managed as an integrated and complementary system, and environmental budgets should give priority to training and rewards, since these two dimensions show the strongest links with behavior and offer the greatest return.

Future studies could include several ministries or compare public and private organizations, use probability sampling and larger samples, and adopt longitudinal or multisource designs. Multiple regression or structural equation modeling would allow researchers to estimate the unique effect of each GHRM dimension and to test mediators such as green culture, green commitment, and psychological green climate, as well as moderators such as environmental values and personal norms.

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