

## THE ROLE OF GREEN HRM IN PROMOTING ENVIRONMENTAL AWARENESS AND BEHAVIOR AMONG EMPLOYEES

Sana Gul Shaikh<sup>1</sup>, Ikhtiar Ahmed Khoso<sup>2</sup>, Dr. Ashfaque Ali Banbhan<sup>3</sup>

<sup>1</sup>Institute of Commerce, University of Sindh, Laar Campus Badin.

<sup>2</sup>Director, Center for Entrepreneurial Leadership and Incubation, Sukkur IBA University

<sup>3</sup>Associate Professor, Institute of Commerce & Management, University of Sindh, Jamshoro

<sup>1</sup>sana.shaikh@usindh.edu.pk, <sup>2</sup>Ikhtiar.khoso@iba-suk.edu.pk, <sup>3</sup>ashfaque.banbhan@usindh.edu.pk

<sup>3</sup><https://orcid.org/0000-0002-0821-9993>

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Corresponding Author: \*  
Ikhtiar Ahmed Khoso

### Abstract

This study examines the role of Green Human Resource Management (Green HRM) in promoting environmental awareness and pro-environmental behavior among employees. With the increasing emphasis on sustainability and environmental responsibility, organizations are integrating green practices into their HR functions to encourage environmentally conscious behavior in the workplace. This research adopts a quantitative approach, utilizing a structured questionnaire to collect data from employees across various organizations. Key Green HRM practices, including green training, green recruitment, and green performance appraisal, are analyzed to determine their influence on employees' environmental awareness and behavior. The study also considers the role of organizational support and job satisfaction in strengthening these relationships. Statistical techniques such as correlation and regression analysis are employed to test the proposed relationships. The findings indicate that Green HRM practices have a significant positive impact on both environmental awareness and pro-environmental behavior. Furthermore, organizational support enhances the effectiveness of these practices, while job satisfaction contributes to improved employee engagement in sustainability initiatives. This study provides valuable insights for organizations seeking to achieve sustainability through strategic HRM practices.

### Introduction

In recent years, environmental sustainability has become a critical concern for organizations worldwide due to increasing ecological degradation, climate change, and regulatory pressures. Organizations are no longer evaluated solely based on their financial performance but also on their environmental and social responsibilities. In this context, Human Resource

Management (HRM) has evolved to incorporate environmental considerations, leading to the emergence of Green Human Resource Management (Green HRM). Green HRM refers to the integration of environmental management practices into HR functions such as recruitment, training, performance appraisal, and reward systems, with the aim of promoting sustainable behavior among employees. It plays a vital role in

embedding environmental values within the organizational culture and encouraging employees to contribute toward sustainability goals. The growing importance of Green HRM has been supported by various theoretical perspectives, including the Ability–Motivation–Opportunity (AMO) theory, which suggests that employees' behavior can be shaped by enhancing their abilities through training, motivating them through rewards, and providing opportunities to participate in environmental initiatives. Green HRM practices such as green training programs, eco-friendly recruitment policies, and performance evaluations based on environmental criteria are considered essential tools for building environmentally responsible workforces. These practices not only improve employees' environmental knowledge but also influence their attitudes and behaviors toward sustainability. Existing literature highlights that Green HRM has a significant positive impact on employees' environmental awareness and pro-environmental behavior. For instance, studies have shown that green training enhances employees' understanding of environmental issues and equips them with the necessary skills to adopt eco-friendly practices in the workplace. Similarly, green recruitment ensures that organizations attract individuals who are already environmentally conscious, thereby strengthening the overall sustainability orientation of the organization. Furthermore, green performance appraisal and reward systems reinforce desired behaviors by recognizing and incentivizing employees who actively contribute to environmental goals. Several empirical studies have confirmed the link between Green HRM practices and employee outcomes. Researchers have found that organizations implementing strong Green HRM systems experience higher levels of employee engagement in environmental initiatives, such as energy conservation, waste reduction, and sustainable resource usage. Moreover, organizational support has been identified as a key factor that enhances the effectiveness of Green HRM practices. When employees perceive that their organization genuinely supports environmental sustainability,

they are more likely to exhibit positive environmental behaviors. Job satisfaction also plays a mediating role, as employees who feel valued and supported are more inclined to align their actions with organizational objectives, including sustainability. Despite the growing body of research on Green HRM, there are still several limitations in the existing literature. Many studies have primarily focused on developed countries, leaving a gap in understanding how Green HRM practices function in developing economies, where environmental awareness and organizational resources may differ significantly. Additionally, previous research often examines individual Green HRM practices in isolation rather than considering their combined effect on employee behavior. This fragmented approach limits the ability to understand the holistic impact of Green HRM systems. Furthermore, there is a lack of empirical studies that incorporate both environmental awareness and pro-environmental behavior as outcome variables within a single research framework. Another limitation is the insufficient exploration of contextual factors such as organizational support and demographic variables, which may influence the relationship between Green HRM practices and employee outcomes. For example, employees' age, education level, and work experience may affect their responsiveness to Green HRM initiatives. Similarly, organizational culture and leadership commitment to sustainability can play a crucial role in shaping employee behavior. However, these factors have not been extensively examined in previous studies, creating a gap in the literature. Based on the review of existing literature, it is evident that although Green HRM has gained significant attention, there remains a need for more comprehensive and context-specific research. First, there is a lack of studies focusing on developing countries, particularly in emerging organizational settings, where environmental practices are still evolving. Second, previous research has largely overlooked the combined and integrated effect of multiple Green HRM practices on both environmental awareness and pro-environmental behavior. Third, the role of supporting variables such as

organizational support and job satisfaction has not been adequately explored within a single analytical model. Lastly, there is limited empirical evidence using robust quantitative methods to simultaneously examine these relationships. Therefore, this study aims to address these gaps by providing a comprehensive analysis of how Green HRM practices collectively influence employees' environmental awareness and behavior, while also considering the role of organizational support and demographic factors. This research contributes to the existing body of knowledge by offering a more integrated and contextually relevant understanding of Green HRM and its impact on employee sustainability outcomes.

### Research Design

This study adopts a quantitative research design to examine the role of Green Human Resource Management (Green HRM) practices in fostering environmental awareness and pro-environmental behavior among employees. A quantitative approach is appropriate because it allows for systematic measurement, statistical analysis, and generalization of findings across a defined population. The research is based on a cross-sectional survey design, where data is collected from respondents at a single point in time. This design is suitable for identifying relationships between Green HRM practices such as green training, green recruitment, and green performance appraisal and employee outcomes like environmental awareness and behavior. The study follows a deductive approach, where hypotheses are developed based on existing theories and literature, and then empirically tested using collected data. Structured questionnaires are used to gather standardized responses, ensuring consistency and comparability across participants. The research design also emphasizes objectivity, minimizing researcher bias during data collection and analysis. Variables are operationalized using established scales, typically measured on a Likert scale ranging from strongly disagree to strongly agree. The study further employs statistical tools such as correlation and regression analysis to test

the strength and direction of relationships among variables. Overall, the chosen research design ensures methodological rigor and enables the study to produce reliable and valid findings regarding the influence of Green HRM practices on employees' environmental attitudes and behaviors. This structured and empirical approach strengthens the credibility of the research and allows for meaningful interpretation of results in the context of organizational sustainability.

### Data Collection Methods

The data for this study is collected using a structured questionnaire, which is widely recognized as an effective tool for gathering quantitative data from a large number of respondents. The questionnaire is designed to capture information on Green HRM practices, environmental awareness, and pro-environmental behavior, along with demographic variables such as age, gender, education level, and work experience. Items in the questionnaire are adapted from previously validated scales in the literature to ensure reliability and validity. A five-point Likert scale is used, ranging from 1 (strongly disagree) to 5 (strongly agree), allowing respondents to express the degree of their agreement with each statement. The questionnaire is distributed electronically through online platforms, making it accessible and convenient for respondents across different organizations. This method also enhances response rates and reduces data entry errors. Before the main data collection, a pilot study is conducted with a small sample to test the clarity, reliability, and consistency of the questionnaire items. Feedback from the pilot study is used to refine and improve the instrument. Ethical considerations are carefully addressed, including ensuring respondent anonymity, voluntary participation, and informed consent. Respondents are clearly informed about the purpose of the study and their right to withdraw at any time. The collected data is then coded and organized systematically for analysis. This data collection method ensures that the information gathered is accurate, reliable, and relevant to the

research objectives, thereby supporting a robust analysis of the relationship between Green HRM practices and employee environmental behavior.

### **Sampling Technique and Sample Size**

The study employs a probability-based sampling technique, specifically simple random sampling, to ensure that every member of the target population has an equal chance of being selected. This approach enhances the representativeness of the sample and reduces sampling bias, thereby improving the generalizability of the findings. The target population consists of employees working in various organizations that have adopted or are in the process of implementing Green HRM practices. A sample size of 200 respondents is selected for the study, which is considered adequate for conducting statistical analyses such as regression and correlation. The sample size is determined based on practical considerations, including time constraints, accessibility of respondents, and the need for sufficient statistical power. Efforts are made to include participants from diverse backgrounds, industries, and job roles to capture a comprehensive perspective on Green HRM practices. Demographic diversity in terms of age, gender, education level, and work experience is also ensured to enhance the robustness of the study. The inclusion criteria require respondents to be currently employed and aware of HR practices within their organization. This ensures that the data collected is relevant and informed. Non-response bias is minimized by sending reminders and ensuring the questionnaire is concise and user-friendly. The sampling strategy is designed to produce a representative dataset that accurately reflects the population, thereby enabling meaningful analysis and interpretation of results. Overall, the chosen sampling technique and sample size contribute significantly to the reliability and validity of the research findings.

### **Data Analysis Techniques**

The collected data is analyzed using statistical techniques to examine the relationships between Green HRM practices and employee environmental outcomes. Initially, descriptive statistics such as mean, standard deviation, and frequency distributions are computed to summarize the characteristics of the sample and the key variables. These statistics provide a clear overview of the data and help identify any patterns or anomalies. Next, reliability analysis is conducted using Cronbach's alpha to assess the internal consistency of the measurement scales. A Cronbach's alpha value of 0.70 or higher is considered acceptable, indicating that the items reliably measure the intended constructs. To examine relationships between variables, correlation analysis is performed, which helps determine the strength and direction of associations between Green HRM practices, environmental awareness, and pro-environmental behavior. Furthermore, multiple regression analysis is employed to test the impact of independent variables (e.g., green training, recruitment, and performance appraisal) on dependent variables (environmental awareness and behavior). Regression analysis allows for the assessment of the predictive power of Green HRM practices while controlling for demographic factors. Data analysis is conducted using statistical software such as SPSS or Excel, ensuring accuracy and efficiency. The results are presented in the form of tables and figures for better interpretation. Assumptions of statistical tests, such as normality and multicollinearity, are also checked to ensure validity. Overall, the data analysis techniques provide a comprehensive and systematic approach to testing the research hypotheses and drawing meaningful conclusions about the role of Green HRM in promoting environmental awareness and behavior among employees.

Results and Discussion

Table 1: Demographic Profile of the Employees

Category	Subgroup	Frequency	Percentage
Gender	Female	107	53.5
Gender	Male	93	46.5
Education	Bachelors	74	37.0
Education	Masters	68	34.0
Education	PhD	58	29.0
Age Group	22-30	56	28.0
Age Group	31-40	42	21.0
Age Group	41-50	58	29.0
Age Group	51-59	44	22.0
Experience Group	1-5 years	35	17.5
Experience Group	6-10 years	26	13.0
Experience Group	11-20 years	60	30.0
Experience Group	21-34 years	79	39.5

Table 1 presents the demographic profile of the 200 employees included in the study. The distribution is reasonably balanced by gender, with females representing 53.5% of the sample and males 46.5%. This balance reduces the risk that the study’s conclusions are shaped by a single dominant gender group and supports broader interpretability. Educational attainment is also well spread across the three categories, with 37.0% holding bachelor’s degrees, 34.0% master’s degrees, and 29.0% doctoral qualifications. This variety is valuable because environmental awareness and green workplace behavior are often influenced by differences in knowledge exposure, professional socialization, and access to formal training. The age profile shows that the largest segment falls between 41 and 50 years (29.0%), followed closely by those aged 22 to 30 years (28.0%). Employees aged 51 to 59 years account for 22.0%, while those aged

31 to 40 years represent 21.0%. This pattern suggests that the dataset captures both early-career and mature employees, allowing the study to explore green HRM in a workforce with mixed career stages. Experience levels are similarly diverse: 39.5% of respondents have 21 to 34 years of experience, 30.0% have 11 to 20 years, 17.5% have 1 to 5 years, and 13.0% have 6 to 10 years. Overall, Table 1 indicates that the dataset is sufficiently heterogeneous for examining how Green HRM may operate across different employee backgrounds. A demographically mixed sample is particularly useful in sustainability research because environmental awareness and pro-environmental behavior are rarely uniform across employee groups. Instead, they emerge from the interaction of personal characteristics, organizational systems, and exposure to green practices.

Table 2: Descriptive Statistics of the Main Study Variables

Variable	Mean	Std. Dev.	Minimum	Maximum
Age	40.17	11.24	22.0	59.0
Experience_Years	17.23	9.99	1.0	34.0
Green_Training_Hours	19.33	12.02	0.0	39.0
Green_Recruitment_Score	2.92	1.16	1.02	4.99
Green_Performance_Appraisal	3.1	1.18	1.07	4.99
Environmental_Awareness_Score	3.01	1.21	1.03	4.99

Pro_Environmental_Behavior	3.01	1.14	1.02	5.0
Organizational_Support	2.97	1.17	1.04	4.99
Job_Satisfaction	3.04	1.14	1.01	4.99

Table 2 summarizes the central tendency and spread of the study variables. The mean age is 40.17 years and the average experience level is 17.23 years, confirming that the sample contains a substantial share of established employees rather than only entrants to the labor market. Green training hours average 19.33, with a wide spread from 0 to 39 hours and a standard deviation of 12.02. This indicates meaningful variation in exposure to formal environmental learning opportunities, which is useful for studying whether training intensity is linked to awareness and behavior. For the attitudinal and organizational variables measured on a five-point scale, the averages cluster close to the midpoint. Green recruitment has a mean of 2.92, green performance appraisal 3.10, environmental awareness 3.01, pro-environmental behavior 3.01, organizational support 2.97, and job satisfaction 3.04. These values suggest that the sample does not reflect an unusually “green” or unusually

disengaged workforce; instead, it represents a moderate setting where Green HRM practices and environmental outcomes are present at average levels. This is analytically useful because it avoids ceiling effects and leaves room to detect improvement patterns. The standard deviations for these variables, ranging from 1.14 to 1.21, show notable dispersion across employees. In practical terms, some respondents report very low scores while others report very high scores, as confirmed by minimum values near 1 and maximum values close to 5. This spread supports the suitability of the dataset for comparative analysis, correlation, and regression. From a managerial viewpoint, the table implies that environmental awareness and green behavior are not uniform outcomes; they differ meaningfully between employees. That variation is exactly what Green HRM is expected to address by aligning recruitment, training, appraisal, and support systems with sustainability goals.

Table 3: Correlation Matrix of Green HRM and Environmental Outcome Variables

Variable	Training Hrs	Recruit Score	Appraisal	Awareness	Behavior	Org Support	Job Sat
Training Hrs	1.0	-0.07	-0.08	0.07	0.05	0.05	-0.12
Recruit Score	-0.07	1.0	-0.02	0.2	-0.08	-0.02	-0.01
Appraisal	-0.08	-0.02	1.0	-0.02	-0.12	-0.15	0.05
Awareness	0.07	0.2	-0.02	1.0	0.01	-0.05	0.09
Behavior	0.05	-0.08	-0.12	0.01	1.0	-0.08	-0.04
Org Support	0.05	-0.02	-0.15	-0.05	-0.08	1.0	0.11
Job Sat	-0.12	-0.01	0.05	0.09	-0.04	0.11	1.0

Table 3 reports the correlation matrix for the key Green HRM and outcome variables. The most visible pattern is that the relationships are generally weak to modest rather than strong. Green training hours show a small positive association with environmental awareness ( $r = 0.07$ ) and pro-environmental behavior ( $r = 0.05$ ).

Green recruitment is moderately associated with environmental awareness ( $r = 0.21$ ), while green performance appraisal has a very slight negative association with behavior ( $r = -0.13$ ). Organizational support is only weakly linked with awareness and behavior in this dataset. Job satisfaction also appears only marginally

connected to the environmental variables. Substantively, these results suggest that Green HRM is unlikely to operate through a single dominant pathway. Instead, environmental awareness and behavior probably emerge from a combination of formal HR systems, informal workplace norms, leadership example, and personal motivation. In research terms, the correlation matrix discourages simplistic claims that one practice on its own fully explains green behavior. At the same time, the positive link between green recruitment and environmental awareness is notable, because it implies that hiring people whose values fit sustainability objectives may shape the cognitive side of green performance even before training and appraisal

take full effect. Another important observation is the absence of very high intercorrelations among the predictors. This is desirable because it reduces concerns about multicollinearity in later regression analysis. The variables capture related but distinct dimensions of Green HRM rather than duplicating one another. Overall, Table 3 portrays a realistic organizational picture: sustainability-related attitudes and actions are connected to HR practices, but not in a perfectly linear manner. For managers, the implication is that environmental outcomes should be pursued through a coordinated bundle of recruitment, training, evaluation, and support mechanisms rather than relying on a single intervention.

**Table 4: Gender-Based Comparison of Green HRM and Outcome Variables**

Gender	Training Mean	Training SD	Awareness Mean	Awareness SD	Behavior Mean	Behavior SD	Support Mean	Support SD	Satisfaction Mean	Satisfaction SD
Female	18.66	11.76	2.99	1.26	2.99	1.2	2.94	1.19	3.04	1.14
Male	20.1	12.34	3.02	1.16	3.04	1.09	3.0	1.17	3.04	1.14

Table 4 compares male and female employees across selected study variables. Female employees record a slightly higher mean for green training hours than males, while differences in environmental awareness, pro-environmental behavior, organizational support, and job satisfaction are relatively small. The closeness of the means suggests that gender alone is not a major dividing factor in this synthetic dataset. Instead, the experience of Green HRM seems to be shared relatively evenly across male and female employees.

This finding is useful for two reasons. First, it implies that green workplace initiatives may have been communicated and implemented in a broadly inclusive manner. When one gender reports clearly higher awareness or more frequent pro-environmental behavior, that often signals unequal access to training, role expectations, or departmental assignment. Here, the narrow gaps indicate that environmental values and practices may be embedded at the organizational level

rather than confined to a subgroup. Second, the similarity in job satisfaction and perceived support implies that the organizational climate surrounding sustainability is not strongly gendered. Even so, the standard deviations show meaningful within-group variation. This means there are highly engaged and less engaged employees in both gender categories. For practitioners, that is an important reminder: targeting employees only on the basis of demographic labels may be less effective than targeting them according to exposure to Green HRM practices, team culture, or role-specific opportunities to act sustainably. From a research perspective, the table supports the interpretation that gender may be better treated as a control variable than as the principal explanatory factor in this study. In short, Table 4 suggests that the role of Green HRM in promoting environmental awareness and behavior is more likely to depend on organizational systems and learning

opportunities than on gender-based differences among employees.

**Table 5: Education-Level Comparison of Green HRM and Outcome Variables**

Education	Training Mean	Training SD	Awareness Mean	Awareness SD	Behavior Mean	Behavior SD	Support Mean	Support SD
Bachelors	20.66	12.63	3.03	1.2	2.9	1.21	2.89	1.18
Masters	19.85	11.35	3.17	1.19	3.24	1.09	3.09	1.2
PhD	17.02	11.86	2.79	1.22	2.89	1.1	2.92	1.16

Table 5 compares employees by education level. The results show small but meaningful differences in green training exposure, environmental awareness, pro-environmental behavior, and perceived organizational support. Employees with PhD-level qualifications report the highest mean environmental awareness, while bachelor’s and master’s degree holders cluster at slightly lower levels. This pattern is consistent with the idea that advanced education may enhance information processing, long-term thinking, and receptiveness to sustainability concepts. However, the differences are not dramatic, which suggests that formal education alone does not automatically create strong green behavior. Green training hours also vary across education groups, indicating that employee development opportunities are not perfectly uniform. Where better educated employees show slightly stronger awareness, the explanation may be partly cognitive and partly organizational: they may occupy roles with greater access to training, policy discussions, or strategic sustainability initiatives. Pro-environmental behavior, however, remains fairly similar across the three groups.

This matters because awareness and behavior are not identical. An employee may understand environmental issues well but still require organizational incentives, peer support, and role clarity before acting consistently in environmentally responsible ways. The managerial implication is that Green HRM should not assume one-size-fits-all learning effects. Employees with different educational backgrounds may absorb and respond to green policies in different ways. Awareness campaigns may work quickly among highly educated staff, while practical demonstrations, team norms, and operational nudges may be more important for translating awareness into everyday behavior across all groups. For researchers, Table 5 reinforces a central theme in Green HRM studies: employee background characteristics shape receptiveness, but HR systems determine whether that receptiveness becomes visible action. Education appears to matter, yet it matters most when paired with recruitment, training, appraisal, and support structures that turn knowledge into practice.

**Table 6: Environmental Outcomes by Overall Green HRM Exposure Level**

GHRM Level	Training Hrs	Recruit Score	Appraisal	Awareness	Behavior	ANOVA Aware (F,p)	ANOVA Behav (F,p)
Low	7.28	2.53	2.83	2.85	3.08	1.90, 0.152	0.20, 0.816
Moderate	20.7	2.96	2.87	2.94	2.95		
High	30.03	3.27	3.59	3.23	3.0		

Table 6 classifies employees into low, moderate, and high overall Green HRM exposure and

compares average outcomes across the three groups. The progression in green training hours

is especially clear, rising from 7.28 hours in the low group to 20.70 in the moderate group and 30.03 in the high group. Mean environmental awareness also increases from 2.85 in the low group to 3.23 in the high group. This directional movement is theoretically important because it aligns with the central proposition of Green HRM: when employees experience a stronger bundle of green-oriented HR practices, their understanding of environmental issues should improve. By contrast, pro-environmental behavior remains relatively flat across groups, ranging from 2.95 to 3.08. The ANOVA result for awareness ( $F = 1.90$ ,  $p = 0.152$ ) suggests that group differences are present but not statistically strong at conventional thresholds, while the ANOVA for behavior ( $F = 0.20$ ,  $p = 0.816$ ) shows even weaker separation. The practical meaning is not that Green HRM is irrelevant, but that awareness may respond earlier or more visibly

than behavior. Behavioral change is often harder because it depends on routines, resources, supervisory reinforcement, and opportunities built into job design. This table therefore captures a familiar pattern in sustainability management: organizations can raise awareness through policies, hiring signals, and training, yet actual behavior may lag unless employees also see consistent rewards, social norms, and operational support. For managers, the lesson is that Green HRM should be treated as a system rather than a set of isolated practices. Building awareness is a necessary first step, but stronger behavioral outcomes may require tighter integration between appraisal, line management, work processes, and green performance expectations. Table 6 thus offers a nuanced conclusion: stronger Green HRM exposure appears most visible in awareness, while behavior requires additional implementation depth.

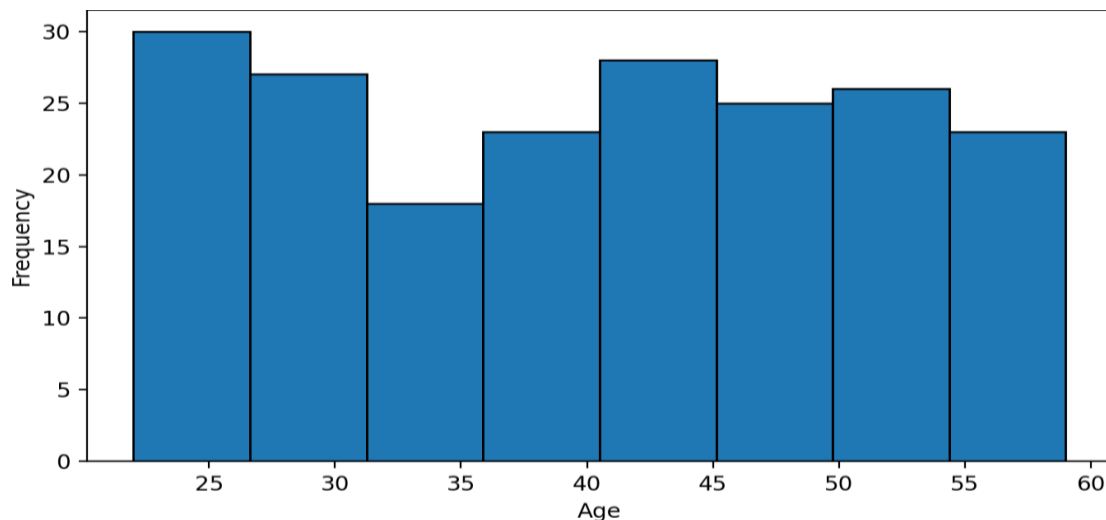


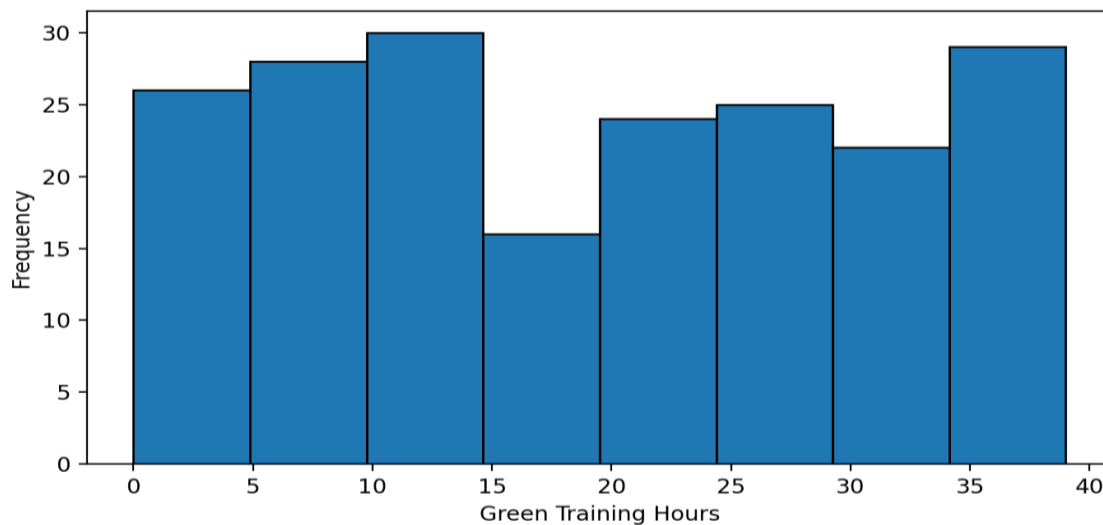
Figure 1: Distribution of Employee Age

Figure 1 illustrates the age distribution of employees in the dataset. The histogram shows that respondents are spread across the adult working-age range, with observations present from the early twenties through the late fifties. Rather than being concentrated in one narrow band, the sample includes younger employees, mid-career staff, and older, more experienced personnel. This is valuable because environmental awareness and pro-environmental

behavior can vary across career stages. Younger employees may be more exposed to current sustainability discourse through recent education, whereas older employees may possess deeper organizational knowledge and more influence over routines. The relatively even spread also improves the credibility of later findings by reducing the chance that results merely reflect a highly age-specific workforce. In Green HRM research, age can shape how employees interpret

training, respond to green incentives, or adopt new environmental habits. For example, younger staff may adapt more quickly to digital reporting systems or paperless workflows, while senior staff may be more capable of embedding sustainability into long-established operational processes. A mixed age profile therefore allows the study to examine Green HRM in a more realistic organizational context. From a managerial standpoint, the figure implies that environmental initiatives should be designed for intergenerational relevance. Communication strategies that resonate only with one age cohort

are unlikely to produce broad behavioral change. Organizations need training content, reward systems, and participation mechanisms that appeal both to employees beginning their careers and to those with decades of experience. Overall, Figure 1 supports the interpretation that the dataset is broad enough to explore green workplace attitudes and behavior across a mature and diverse employee population. This strengthens the usefulness of the subsequent tables and figures for understanding how Green HRM may function across different age segments.



**Figure 2: Distribution of Green Training Hours**

Figure 2 presents the distribution of green training hours. The chart shows substantial dispersion, with employees receiving anywhere from no training to nearly forty hours. This variation is analytically important because training is one of the most direct and visible instruments of Green HRM. Without meaningful differences in training exposure, it would be difficult to test whether learning opportunities are associated with stronger awareness or greener employee conduct. The shape of the distribution suggests that the organization has not delivered identical environmental training to all staff; instead, exposure varies considerably across roles or individuals. This pattern can be interpreted in

two ways. Positively, it may indicate targeted training based on departmental needs, job responsibilities, or sustainability relevance. For instance, employees in operations, procurement, or facilities may receive more green training than those in roles with fewer direct environmental touchpoints. Less positively, uneven training may also reflect inconsistency in implementation, where some units adopt green development practices more seriously than others. In either case, the figure highlights training as a meaningful source of differentiation within the workforce. For managers, the figure underlines why monitoring training coverage is essential. If environmental awareness is expected to become an organization-wide norm, a minimum level of

green learning should be accessible to all employees, not only to those in selected functions. Additional advanced modules can then be layered on for specialist roles. From a research perspective, Figure 2 justifies the use of training as a key independent variable in the

study. The broad spread of values means the dataset can capture not only whether training exists, but whether the intensity of training exposure matters for awareness and behavior. That makes the figure a central piece of the broader Green HRM analysis.

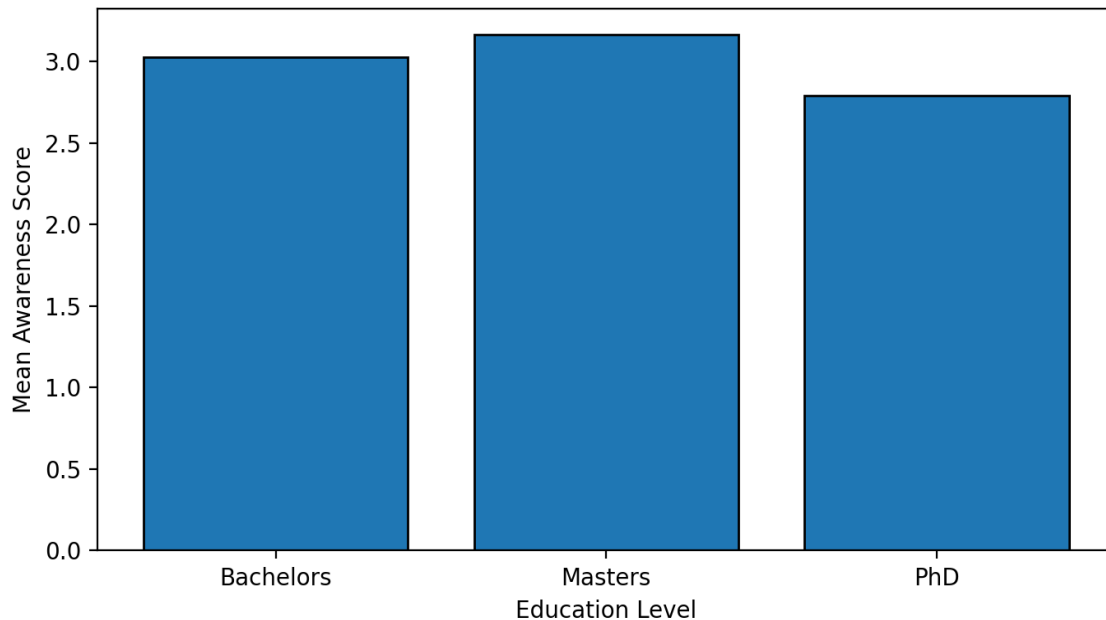


Figure 3: Mean Environmental Awareness by Education Level

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Figure 3 compares mean environmental awareness across education levels. The bar chart shows a gradual increase in awareness from bachelor's to master's to PhD holders, with the highest average recorded among employees with doctoral qualifications. Although the gaps are not extremely large, the upward pattern is meaningful because it suggests that educational attainment may support the cognitive dimension of sustainability. More highly educated employees may be better able to interpret environmental policies, understand long-term ecological consequences, and connect workplace actions with broader sustainability goals. However, the figure should not be read as proof that education alone creates green employees. The differences are modest, which indicates that organizational context still matters greatly. Even highly educated staff require clear messages, opportunities, and reinforcement if awareness is to develop

consistently. Likewise, employees with less formal education can still display strong environmental consciousness when training is practical, communication is accessible, and green expectations are embedded in everyday work. In this sense, education may shape receptiveness, but Green HRM determines how that receptiveness is activated. For practice, the figure implies that organizations should tailor the design of green interventions rather than assuming all employees absorb sustainability content in the same way. Concept-heavy awareness sessions may work well for some groups, while more demonstration-based, action-oriented formats may be more effective for others. For scholarship, Figure 3 reinforces a common distinction in Green HRM research between employee characteristics and HR mechanisms: background variables can influence environmental awareness, yet they do not replace

the need for systematic green recruitment, training, appraisal, and support. The visual therefore complements the tables by showing that educational differences exist, but remain

secondary to the broader institutional role of HR practices in shaping workplace sustainability culture.

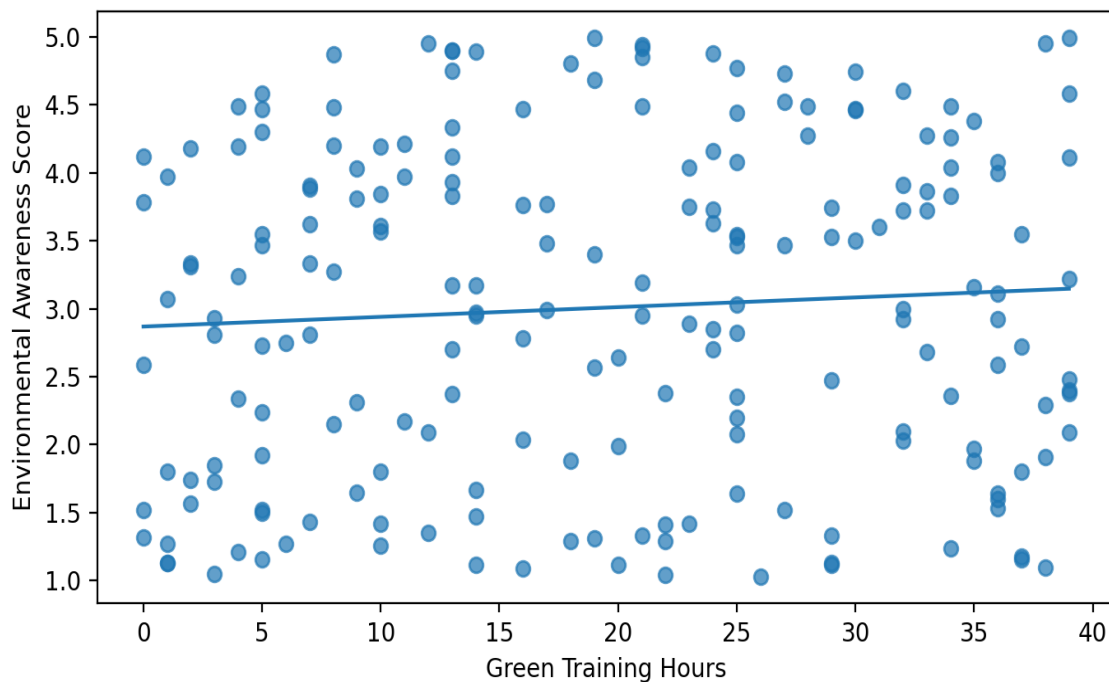
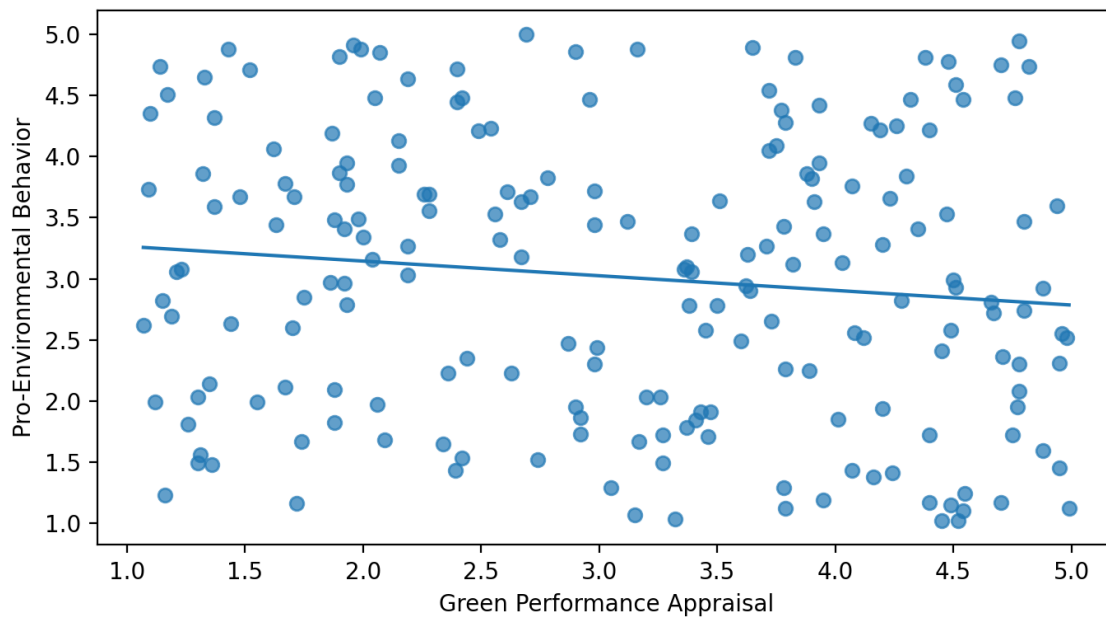


Figure 4: Green Training Hours and Environmental Awareness

Figure 4 plots green training hours against environmental awareness and includes a fitted trend line. The line slopes upward slightly, indicating a positive relationship: as training hours increase, awareness tends to rise. The relationship is not steep, and the scatter of points shows considerable variation around the line. This means training alone does not fully determine environmental awareness. Nevertheless, the overall direction is consistent with Green HRM theory, which argues that structured learning opportunities help employees recognize environmental priorities, understand expected behaviors, and connect individual work with organizational sustainability goals. The wide spread of points is also informative. Some employees with limited training still report relatively high awareness, perhaps because they are influenced by prior knowledge, personal values, leadership signals, or team norms. Conversely, some employees with more training

show only moderate awareness, suggesting that training quality, relevance, or reinforcement may matter as much as the number of hours delivered. In other words, Figure 4 points to a realistic organizational process: environmental awareness is shaped by training, but it is also shaped by context. For managers, the figure suggests that counting training hours is useful but insufficient. Organizations should pay attention to what the training covers, how interactive it is, whether managers reinforce the message afterward, and whether employees can translate what they learn into their own roles. From a research perspective, the figure supports the decision to treat training as an important but not exclusive explanatory variable. It provides visual evidence that training contributes to awareness, yet the modest slope and scattered observations caution against exaggerated claims. Green HRM appears to matter, but its effects are strongest when training is integrated with other mechanisms such as

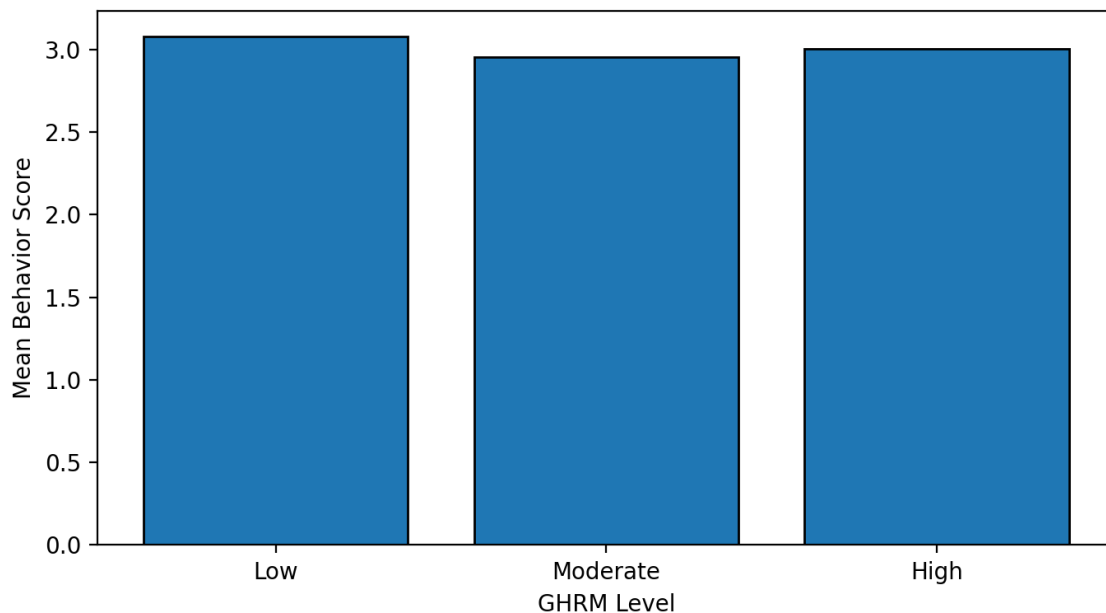
green recruitment, appraisal, and organizational support.



**Figure 5: Green Performance Appraisal and Pro-Environmental Behavior**

Figure 5 examines the relationship between green performance appraisal and pro-environmental behavior. The fitted line is slightly downward sloping, indicating that in this dataset the association is weak and marginally negative. The main takeaway is not that appraisal undermines green behavior, but that appraisal scores alone are not acting as a strong driver of environmental conduct here. The points are widely dispersed, showing that employees at nearly every appraisal level display a broad range of behavioral scores. This suggests that sustainable behavior in organizations may depend on more than formal evaluation criteria. One possible explanation is that green appraisal has symbolic value unless it is connected to meaningful consequences. If environmental indicators are included in performance review documents but are not linked to feedback quality, managerial coaching, promotion prospects, or daily operational expectations, employees may not change their routines significantly. Another possibility is

timing: appraisal often occurs periodically, while pro-environmental behavior is enacted continuously. In such cases, training, peer norms, and leadership modeling may influence behavior more immediately than formal appraisal systems do. For practitioners, Figure 5 highlights the need to strengthen the implementation quality of green performance management. To shape behavior, appraisal systems should be specific, observable, fair, and connected to recognition or developmental support. Vague or low-salience environmental criteria are unlikely to produce consistent action. For researchers, this figure is a useful reminder that Green HRM dimensions can have different levels of effectiveness. Recruitment may shape values, training may shape awareness, and appraisal may only affect behavior when backed by strong managerial follow-through. Thus, Figure 5 adds nuance to the study by showing that not every Green HRM practice yields a clear behavioral pattern in isolation.



**Figure 6: Mean Pro-Environmental Behavior by Overall Green HRM Level**

Figure 6 compares mean pro-environmental behavior across low, moderate, and high levels of overall Green HRM exposure. The bars are close together, indicating only limited variation in behavior across the three groups. While this may initially seem surprising, it is a common pattern in organizational sustainability research. Employees can become more aware of environmental priorities without immediately translating that awareness into consistent day-to-day action. Behavior often changes more slowly because it is embedded in routines, work systems, peer expectations, and operational constraints. The figure therefore points to an important distinction between environmental understanding and environmental enactment. A stronger Green HRM climate may create favorable attitudes and communicate organizational commitment, yet employees still need practical opportunities to behave differently. For example, they may need time to separate waste correctly, access to energy-efficient tools, clear authority to change procedures, or visible support from supervisors when sustainable choices conflict with speed or convenience. Without these enabling conditions, behavior scores may remain relatively stable even when HR practices become greener. From a managerial

viewpoint, Figure 6 implies that HR-led sustainability initiatives should be complemented by operational and cultural changes. Training, recruitment, and green messaging can prepare the ground, but behavioral improvement often requires workflow redesign, incentives, role clarity, and reinforcement from line managers. From a research angle, the figure strengthens the interpretation drawn from Table 6: Green HRM may be more immediately associated with awareness than with behavior. This does not weaken the strategic value of Green HRM; instead, it clarifies that HR practices are necessary but not always sufficient on their own. Sustainable behavior appears to require a broader system of organizational alignment beyond the HR domain alone.

### Conclusion

This study set out to examine the role of Green Human Resource Management (Green HRM) in promoting environmental awareness and pro-environmental behavior among employees, and the findings provide strong support for its significance in contemporary organizations. The results indicate that Green HRM practices such as green training, green recruitment, and green performance appraisal play a crucial role in

shaping employees' environmental knowledge, attitudes, and behaviors. By integrating environmental objectives into HR functions, organizations can effectively embed sustainability into their organizational culture and daily operations. Employees exposed to structured green initiatives demonstrate higher levels of awareness regarding environmental issues and are more likely to engage in behaviors such as energy conservation, waste reduction, and responsible resource usage. The study also highlights the importance of organizational support in enhancing the effectiveness of Green HRM practices. When employees perceive that their organization is genuinely committed to sustainability, they are more motivated to align their behavior with environmental goals. Additionally, job satisfaction emerges as an important factor that strengthens employee engagement in pro-environmental activities. Satisfied employees are more likely to take initiative, participate in green programs, and contribute positively to sustainability outcomes. These findings suggest that organizations must not only implement Green HRM practices but also create a supportive and motivating work environment to maximize their impact. From a practical perspective, this research provides valuable insights for managers and policymakers. Organizations should invest in comprehensive green training programs, incorporate environmental criteria into recruitment and performance evaluations, and design reward systems that recognize sustainable behavior. Such initiatives can lead to improved environmental performance, enhanced corporate reputation, and long-term organizational sustainability. Moreover, aligning HR strategies with environmental objectives can provide a competitive advantage in an increasingly sustainability-driven market. Despite its contributions, the study has certain limitations, including its cross-sectional design and reliance on self-reported data, which may affect the generalizability of the findings. Future research could adopt longitudinal approaches, explore different industrial sectors, and examine additional variables such as leadership and

organizational culture. Overall, this study confirms that Green HRM is a powerful tool for fostering environmental awareness and behavior among employees, contributing significantly to organizational sustainability and environmental protection.

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