# Integrating Environmental Sustainability into HR Practices: A Study on the Impact of Green HRM on Employee Engagement and Retention

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| Article Info | Abstract |
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**ABSTRACT**

**Background of study:** Growing environmental challenges and increasing stakeholder pressure have compelled organizations to integrate sustainability into their core business strategies. Human Resource Management plays a critical role in this transformation through the adoption of Green Human Resource Management (GHRM) practices, which embed environmental principles into recruitment, training, performance management, and workplace design. However, empirical evidence on how GHRM influences employee engagement and retention remains limited, particularly across diverse organizational contexts.

**Aims and scope of paper:** This paper aims to examine the impact of Green HRM practices—specifically green training programs, eco-friendly workplace design, and green recruitment policies—on employee engagement and retention intention. The scope of the study focuses on employees working in organizations that have implemented sustainability-oriented HR practices across various industries.

**Methods:** A quantitative, cross-sectional research design was employed. Data were collected through structured questionnaires distributed to 200 employees using purposive sampling. Descriptive statistics, correlation analysis, and analysis of variance (ANOVA) were applied to examine relationships and differences among variables. Reliability and validity tests confirmed the robustness of the measurement instruments.

**Result**: The findings indicate strong positive relationships between Green HRM practices and employee engagement, as well as between engagement and retention intention. All GHRM variables recorded high mean scores, and ANOVA results revealed significant differences in engagement and retention based on the level of GHRM implementation.

**Conclusion:** The study concludes that Green HRM practices significantly enhance employee engagement and retention. Integrating environmental sustainability into HR policies not only supports organizational sustainability goals but also strengthens employee commitment and long-term organizational performance.

## INTRODUCTION

In the past, sustainability was just a minor issue in company. Now, it's a major strategic aim. Climate change, the loss of biodiversity, the lack of resources, and the degradation of the environment are all problems that everyone, including businesses, have to deal with right immediately. All of these are big problems that affect the whole world. A lot of the work that organisations have done in the past

to promote sustainability has been about things like how to run supply chains, make things, save energy, and design things (Fatchurrohman et al., 2026). On the other hand, more and more people have come to understand that how we treat others is also very important for promoting sustainability during the last twenty years. This information has given rise to the concept of "Green Human Resource Management" (GHRM). Green HRM is when ideas about conserving the environment are added to the policies, procedures, and culture of human resource management (Anwar & Jati, 2023).

"Green Human Resource Management" (GHRM) is more than simply the traditional HR tasks of hiring, training, assessing performance, and communicating to employees. It changes the way people think about these jobs so that they may earn money and help the environment in the long term (Fitria et al., 2024). For example, hiring processes should be adjusted to bring in people who care about the environment and do activities that help it. A large aspect of training programs could be teaching people about the environment and how to be green. Goals for the environment should be part of performance evaluations, and prizes could be based on how well someone does at being eco-friendly. The main goal of "Green Human Resource Management" (GHRM) is to recruit individuals that are not only good at their professions but also care about the environment. This change is particularly important since workers, consumers, the government, and investors are all putting more pressure on firms to do things that are good for people and the environment (Annisa et al., 2024).

Not only is it the right thing to do to make human resource operations more environmentally friendly, but it is also a strategic imperative. A number of studies have indicated that younger workers, including Millennials and Gen Z, would rather work for organisations that share their values and are sincerely dedicated to social and environmental issues (Zihan et al., 2024). People in these groups are more likely to stay with firms that do good things for the environment and society and be devoted to their professions. "Green Human Resource Management" (GHRM) might be a great method to make workers more interested in their jobs, their teams, and their companies. Engagement is how individuals feel and think about their employment. People that care about their jobs are more productive, creative, and willing to accomplish more than what is asked of them. You may do all of these things to go ahead in a market that is continually changing (Wati & Almadana, 2025).

It's just as crucial to keep workers as it is to connect them with "Green Human Resource Management" (GHRM). Retention refers to how well a firm can keep its skilled workers and cut down on turnover. A firm with a high turnover rate may be hurt in more than one manner. It might make it harder for a team to work together, make the company less competent, and hurt relationships with consumers. It might also cost extra to acquire and train new employees (Yunaningsih et al., 2024). People are more inclined to stay with a firm for a long time if they think it matches their values and gives them a job that matters. This might suggest that the business cares about the planet. "Green Human Resource Management" (GHRM) might help retain workers by supporting these kinds of actions. Retention isn't just about making sure people show up; it's also about keeping them engaged, motivated, and on the same page with the company's goals. "Green Human Resource Management" (GHRM) methods that let workers assist the environment may help keep this higher level of employee retention going (Prasad et al., 2025).

You may want to check at various theories, such Social Exchange Theory (SET) and Self-Determination Theory (SDT), to discover how "Green Human Resource Management" (GHRM), keeping employees happy, and keeping employees are all related. Social exchange theory (SET) says that when a business treats its employees well, such by giving them opportunity to help good causes, they feel like they have to do and think good things in their own life to show their gratitude (Riyanto et al., 2023). "Green Human Resource Management" (GHRM) solutions could make the social exchange relationship stronger by showing that the company cares about more than just making money. The SDT, on the other hand, focusses at how motivation emerges from inside. People that are very motivated think that their employment is in line with their ideals and helps something bigger than themselves. "Green Human Resource Management" (GHRM) harnesses this natural drive to help individuals deal with big environmental problems (Adib et al., 2026).

Changes in global laws and cultural norms are two things that make "Green Human Resource Management" (GHRM) increasingly more important. The Sustainable Development Goals (SDGs) set by the United Nations show how important organisations are for making the world a better place for everyone. This comprises Goal 8 (Decent Work and Economic Growth), Goal 12 (Responsible Consumption and Production), and Goal 13 (Climate Action) (Naik et al., 2025). Companies need to use their resources more wisely and lower their carbon footprint since governments are adopting more and more restrictions about the environment. Buyers and investors are starting to think about Environmental, Social, and Governance (ESG) factors when they make decisions. People are more likely to do business with firms that are really sustainable. "Green Human Resource Management" (GHRM) is not only something that HR does; it's also an important part of a company's strategy for long-term success (Amira & Febrianti, 2022).

It is becoming more and more vital to manage people in a way that is good for the environment, but it isn't always easy. One of the biggest problems is finding out how to balance environmental goals with traditional human resource goals, including boosting productivity and profits. If workers or management at a company see sustainability as an extra duty instead than a main emphasis, they could push back against the company (Eliyana, 2025). There might also be a lack of skills since both workers and HR professionals need to learn new ones to conduct green projects successfully. Because diverse aspects work together, it could also be hard to acquire a clear picture of how "Green Human Resource Management" (GHRM) affects factors like employee engagement and retention. These problems show how important it is to perform research that not only looks at the benefits of "Green Human Resource Management" (GHRM), but also finds out what conditions and processes make it work well (Huang et al., 2022).

The main goal of this study is to find out how Green HRM practices impact how loyal and engaged workers are. People don't only think of involvement as a mental and emotional state. They also think of behaviours that reflect it, including volunteering, working together, and being creative. When looking at retention, both how long someone has been there and how much they desire to stay are taken into account. We also look at how organisational culture, leadership, and job satisfaction operate as mediating factors. It also says that factors including a person's age, gender, and level of education, as well as the size, industry, and location of the organisation, might affect the link between Green HRM and these outcomes. These things may not have anything to do with the connection.
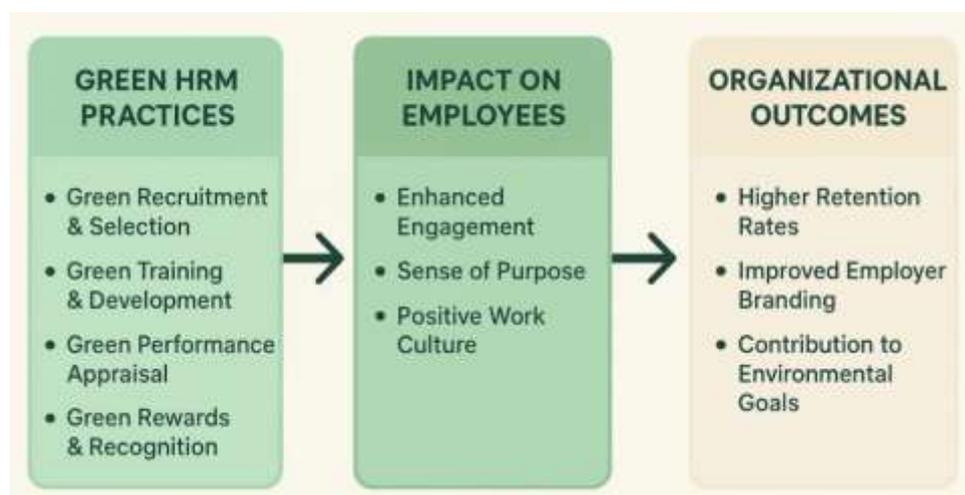


**Figure 1.** Conceptual Framework Linking Green HRM Practices to Employee Engagement and Retention

Figure 1 demonstrates the major points of this study by illustrating how Green HRM policies impact workers and, in the end, how they affect the overall company. This framework lays forth the main principles that this research is built on. Green recruiting and selection, green training and development, green performance assessment, and green incentives and recognition are all examples

of "Green Human Resource Management" (GHRM) techniques that help workers feel more linked to the company's values and goals. This has a direct impact on how engaged employees are (Handayani et al., 2024). Because of this, these increased levels of engagement lead to better company branding, higher staff retention rates, and enormous progress towards environmental objectives. The image depicts how HR's efforts to be more eco-friendly influence workers and how the entire organisation benefits when these efforts are put into action. There are a lot of crucial HRM responsibilities that fall under the umbrella of green HRM. The purpose of green hiring and selection is to discover individuals who care about the environment and can assist the business realise its long-term objectives. Through training and development programs that focus on environmental sustainability, workers learn about and how to do activities that are beneficial for the environment. For instance, kids learn how to utilise resources in a manner that doesn't hurt the environment, preserve energy, and cut down on waste. An environmentally friendly performance review is one that takes the environment into account at every stage. This illustrates how vital it is to expect people to care about the environment (Sugiharto & Ardiansyah, 2025). Green incentives and recognition connect pay and praise to accomplishment in the area of environmental performance in order to promote the behaviours that are wanted. If applied together, these techniques might help make an organisation more environmentally friendly by making sustainability a part of its everyday operations and decision-making (Jamal et al., 2025).

These activities are aimed to aid workers in several ways. For example, they may provide workers a reason to get up in the morning and work on things that are important to them, which might make them more interested in their jobs. They could help make the workplace a better place to work by encouraging people to work together, come up with fresh ideas, and share the same goals. This brings us to our second point. They might make the mental contract between the worker and the employer stronger. This might make workers more loyal and less inclined to desire to leave the company. These results are very important for the business since they help maintain staff, boost the company's image, and make sure that the organisation serves the demands of all of its stakeholders. They also assist the company meet its social and environmental objectives, which provides it greater flexibility to conduct business and ensures sure it continues in business for a long time (Widanarni, 2024). As the nature of work and what people expect from their jobs evolve, it becomes more and more important to understand "Green Human Resource Management" (GHRM) in terms of maintaining and engaging employees. Businesses need to find innovative methods to hire, inspire, and maintain workers that go beyond the usual benefits in order to remain ahead of the competition. The economy is unstable, technology is evolving quickly, and the environment is having challenges. More and more people are seeking for occupations that are important to them, align with their views, help them develop as people, and allow them make a difference in the world. "Green Human Resource Management" (GHRM) is a technique to reach these goals and aid the environment at the same time. "Green Human Resource Management" (GHRM) might help workers and employers understand each other better. This is helpful for both sides since it helps them make sure their aims are in line with the goals of the business (Sikumbang et al., 2021).

People who work in human resources and sustainability should pay attention to what this research uncovered. The findings could help HR managers come up with ways to hire, train, evaluate, and reward people that are good for the environment and keep them interested in their work (Ren & Hussain, 2022). The research demonstrates that sustainability managers need to work with HR when developing and carrying out sustainability programs. The research reveals that leaders of organisations may get a strategic edge by making sure that their human capital and environmental objectives are in line with each other. It also highlights how crucial it is to do this to make the organisation work better and serve society and the earth as a whole.

**Review of Literature**

This research looked at how "Green Human Resource Management" (GHRM) techniques affect environmental sustainability (ES) and employee retention (ER) in the automotive industry in Egypt. There are three main parts of "Green Human Resource Management" (GHRM): Green Recruitment

and Selection (GRS), Green Training and Development (GTD), and Green Rewards and Benefits (GRB). The "three main techniques" are these three strategies. Also, one of the goals of the research is to look at what could make people more or less likely to employ GHRM methods in the Egyptian car business. The study project had seventy people take part, and it was set up in a detailed way. present were a lot of different kinds of individuals present, such as top management, line managers, manufacturing leaders, and HR managers. The study also included organised interviews and formal questionnaires. We utilised several regression models to figure out what kind of relationship there is between the independent factors and the dependent variables presented in the models. The GRB was the only main element that had a big effect on ER (Singh, 2020). There were strong positive links between ES and both GTD and GRS. People responded that GRB had the most effect on ES while GRS had the least effect. When it comes to making sure that Egyptian companies can retain good workers and a culture that lasts, GRB is the most essential thing to think about. Management not backing GHRM principles and not knowing how to conduct things in an ecologically responsible manner are two of the biggest problems that keep the car industry from embracing them.

This chapter looks at how to combine digital intelligence with "Green Human Resource Management" (GHRM) to make employees more engaged and likely to stay at work in organisations that care about the environment. The goal of this research is to look at the prospective benefits that digital technology and policies that are good for the environment may have on increasing employee engagement, lowering turnover, and improving the overall efficiency of the company. Businesses that integrate their environmental efforts with their human resources strategy could see a variety of benefits, such as encouraging new ideas, building loyalty, and fostering a positive company culture. This chapter talks about the most important parts that are needed for meaningful involvement and emphasises those parts. Some of these aspects include value alignment, employee well-being, and psychological safety. It shows how important digital platforms are for promoting environmentally friendly actions and figuring out how well they work by looking closely at relevant case studies and published research. This chapter shows how GHRM is relevant in today's business world and delivers helpful advice to companies that want to find a balance between long-term goals for sustainability and employee satisfaction while also keeping a healthy work-life balance. GHRM is short for global human resource management (Andriyana & Setyawati, 2025).

People are increasingly worried about the environment these days, thus "Green Human Resource Management" (GHRM) practices have been getting a lot of attention as a way to enhance the long-term performance of businesses. The purpose of this research is to look at the convoluted links between "Green Human Resource Management" (GHRM) practices and factors like employee engagement, job happiness, dedication to the firm, and environmental performance. The people this research is about are farmers. We employed a detailed quantitative survey to get information from 355 persons for this study. We utilise structural equation modelling to look at what this study found. The results of the investigation suggest that there is a lot of new material that seems fascinating. They highlight the vital role that environmentally friendly HRM practices play in bringing people to work by illustrating how these policies might improve employee engagement. The report also reveals that Green HRM practices make workers happier and more attached to their company, which helps the environment. The study also indicates how essential organisational culture is for garnering support. This backs up the advantages of "Green Human Resource Management" (GHRM) techniques for getting staff interested. This is an excellent illustration of how a company's culture may make it harder or easier for it to employ green human resource management. The outcomes of this research are important for both theory and practice when it comes to making sustainable human resource management techniques better over time. It highlights how important it is for businesses to utilise "Green Human Resource Management" (GHRM) methods on purpose and how important it is to get workers engaged in their efforts to attain their sustainability objectives. It's clear from these findings that we need to build a culture that values sustainability in order to get the most out of the advantages of green human resource management.

Researchers looked at work-life balance (WLB) and sustainability and came up with the idea of green work-life balance (GWLB). One of the aims is to look at the different ways that GWLB policies help

businesses (Guballo, 2025). This is all about how people may lessen the effects that an organisation has on the environment. In the recent several years, there has been a big change in how sustainable "Green Human Resource Management" (GHRM) approaches and human resource (HR) operations are seen to be. The people that work for a company are its most important asset. The goal of this research is to find out how GWLB and GHRM practices affect the corporate sustainability performance (CSP) and employee retention (ER) of UK-based industrial enterprises. It also looks at how environmental innovation (GI) and organisational culture (OC) are linked to the effects of these things. A survey was issued to 450 operational supervisors at different industrial businesses in the UK for this research. We utilised a self-administered survey with a scale to gather information. For the analysis of the data, Smart PLS 4 and SPSS 26 were utilised. Research has demonstrated that CSP and ER have both profited from using GWLB programs and GHRM practices. The results also imply that GI has a role in the link between GWLB, CSP, ER, and GHRM behaviours. OC is not only supporting the aims of GWLB, ER, and CSP, but it is also advocating for the use of environmentally friendly human resource methods in the UK's industrial sector. This research will have an impact on academics, corporate leaders, and human resource management specialists in terms of methods, real-world use, and theoretical issues.

The goal of this research was to look at how workers' environmental commitment (EEC) acted as a link between environmental sustainability (ES), employee turnover intentions (ETI), and "Green Human Resource Management" (GHRM) practices (Green HRMPs). Having a technique, strategy, and plan is really important. A cross-sectional survey was used to get information from 296 people who work for five manufacturing companies that are listed on the Ghana Stock Exchange. The examination of the recorded data employed both descriptive and inferential statistical approaches. To achieve this, the Statistical Package for Social Sciences (SPSS) and SmartPLS were employed. The results showed that EEC only partially mediated the association between Green HRMPs and ES at the organisational level, even though it completely mediated the link between Green HRMPs and ETI at the individual level. Even though it was the main cause for the connection, this was the case. In the real world, there may be a variety of effects: The numbers show that green HRMPs are good for both employee stability and economic stability. To put this in context, it's important for professionals and schools to think about how they may include environmental problems into their daily job. Governments also have to come up with and put into action policies that are currently in place for managing the environment and making sure it stays that way. The goal of these rules is to encourage both public and private enterprises to use ideas and practices that are good for the environment. Along with being new and useful There isn't much information regarding "Green Human Resource Management" (GHRM) and how it affects results at the individual and organisational levels, especially in Sub-Saharan Africa. The research presented here gives real information on an economy that is rising very quickly.

"Green human resource management," or "green HRM," is a planned way of doing things that aims to create an environmental management culture in businesses and get employees involved in activities related to environmental management. This study's goal is to look into the link between "Green Human Resource Management" (GHRM) and employee engagement. It will focus on how environmental policies in a company can change the relationship and how job satisfaction can act as a mediator. This study used a quantitative research method to find out how much sustainability-focused human resource management methods affect how committed workers are. It collected data from people who work in the manufacturing, banking, healthcare, and technology sectors. The results of this research show that workers who work for companies that try to protect the environment are happier with their jobs, which makes them more engaged. They also agree with the idea that job satisfaction is a link between "Green Human Resource Management" (GHRM) and employee engagement in a business. On the other hand, the company's environmental policies have a positive effect on this relationship. This means that well-thought-out policies help make the link between engagement and environmentally responsible human resource management stronger. The same perspective is that manufacturing and healthcare are both harder because of operational problems and other factors. The information technology and finance sectors, on the other hand, say that their employees are more engaged and that "Green Human Resource Management" (GHRM) is more

widely used (Perwira et al., 2025). Also, employees with six to ten years of experience were the most active, which implies that the amount of engagement in Green HRM varies as people go up in their careers. The findings support what RBV and SET said: that sustainability-driven human resource management strategies may increase commitment from both employees and the organisation, and that talent management can provide a company a competitive edge. The research's results show that there has to be actual sustainable integration, employees need to be involved in environmentally friendly projects, and the industry needs to discover methods to do these things. It also talks about what this research means for future studies and how politicians and human resources managers might use it in the real world. To show how the relationship between Green HR and employee engagement differs in different types of organisations, future research need to use new study methods.

**Concept of Green Human Resource Management (GHRM)**

"Green Human Resource Management" (GHRM) is a new method of doing things in the business world today. This strategy was established because there was a strong desire for businesses to be more ecologically friendly. In the 21st century, taking care of the environment has become a new duty of human resource managers. The main goal of human resource management is to employ, train, and retain people so that the firm can fulfil its goals. GHRM makes sure that environmental concerns are not simply a one-time affair by making them a part of the company's culture and how it works. This is done by making sure that HR regulations include things that influence the environment. Human resource management (GHRM) is a means for businesses to manage people and the environment at the same time. This is important since climate change, resource depletion, loss of biodiversity, and a rising demand from society for corporations to be responsible are all challenges. This makes it challenging for companies to handle their workers. This integration is not the same as a basic sign. Because of this, the way workers are employed, trained, evaluated, rewarded, and maintained changes, and they become active players in accomplishing environmental objectives. Also, the way they are paid changes. When workers are seen as partners in creating a better future, the focus shifts from considering them as merely economic resources to seeing them as people who work for you. This development illustrates that people have a very different view of workers now.



**Figure 2.** Concept Of Green Human Resource Management (Ghrm)

In Figure 1 (Concept of GHRM), you can see how this modification will happen in a photograph. The concept sits in the centre, and around it are key HRM aspects like recruiting, training, keeping people happy, retaining them, setting rules that are beneficial for the environment, and saving energy. The image depicts how these aspects are all connected, which makes the point that sustainability is not just one item but an entire system where every HR activity helps the environment. This round form

is like how sustainability works in cycles, with inputs and outputs always going back into the system to make it better.

1. Core Principles of GHRM in Practice

Four crucial principles for putting GHRM into action are integration, engagement, measurement, and continuous improvement. From crafting job advertising to developing leadership development programs, every HR process includes sustainability. It makes it easier for businesses and environmental groups to work together by closing the gap between their activities. For instance, a corporation that believes in integration can change its plan for training personnel to include seminars on how to be a leader in the environment. Future managers will know a lot about business and care about the environment if they do this. To get beyond compliance to real commitment, you have to be engaged. Employees are urged to take the lead on sustainability activities by joining green committees, coming up with suggestions on how to make processes more eco-friendly, or volunteering. Engagement turns sustainability become a shared goal instead than something that comes from above. Accountability and measurement assist make sure that environmental contributions are neither unclear or just for show. GHRM firms create clear, quantifiable objectives, like reducing energy usage in a department by a certain amount, and then they make sure that people or teams meet those goals.
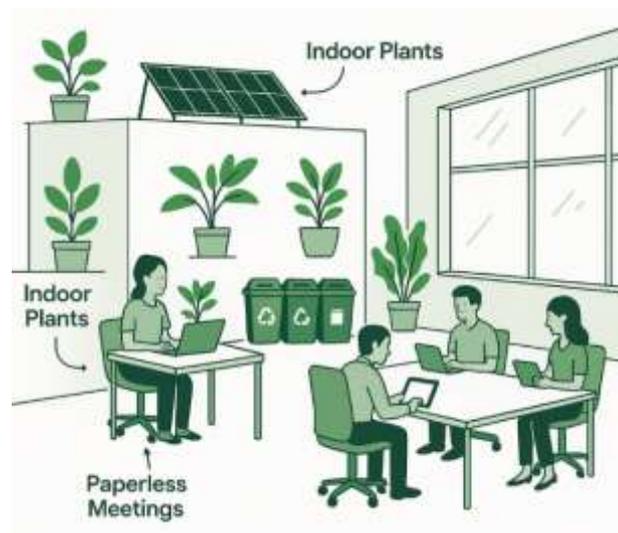


**Figure 3.** Workplace Implementation of GHRM Practices

Finally, ongoing development makes sure that GHRM keeps up with changes in society, technology, and the environment. Companies could convert from old-fashioned ways of training to immersive, low-carbon e-learning solutions as digital tools become better. Figure 2 (Workplace Implementation) depicts in a straightforward way how these principles operate in the actual world. The photo shows a workplace with solar panels for clean electricity, plants inside to clean the air, bins for segregating waste to encourage recycling, and personnel doing meetings without using paper. This graphic demonstrates how GHRM ideas may be used in real life in ways that are healthy for the environment and for workers.

2. GHRM's Role in Employee Engagement

The term "employee engagement" refers to the emotional and mental connections that people have with their occupations. One of the most important factors that makes individuals creative and productive is engagement. By making sure that the company's values match those of its employees, GHRM strengthens this relationship. This is particularly crucial for young people who care a lot about the environment. Workers who work on initiatives that are good for the environment may have a major impact on both the company and the communities where they

reside. Companies may assist make this happen by paying for volunteer labour, conducting contests for new ideas that focus on sustainability, or letting individuals propose ways to make processes more eco-friendly. When employees see that their hard effort led to genuine results, they feel greater pride and ownership in the organisation they work for. GHRM's participatory method also makes sure that the involvement is real. This plan makes sure that workers may not only choose to work on sustainability initiatives, but also how such projects are done. Employees spread the organization's ideals about environmental sustainability both within and outside of the organisation.

3.  The Chain of Impact

The cumulative benefits of GHRM can be seen as a cause-and-effect chain, well represented by Figure 3 (Impact Flowchart). The flow begins with GHRM initiatives, which lead to improved employee engagement. This engagement, in turn, increases job satisfaction, which strengthens retention rates. Finally, these combined effects enhance overall organizational sustainability.



**Figure 4.** Impact Flowchart of GHRM on Engagement, Satisfaction, and Sustainability

This flowchart demonstrates that GHRM is not an isolated practice but a strategic approach that delivers environmental, social, and economic value. Organizations that commit to GHRM are investing not only in the planet but also in the long-term health of their workforce and business model.

## METHOD

The purpose of this study was to find out how "Green Human Resource Management" (GHRM) strategies including training programs, eco-friendly workplace design, and recruiting processes that favour green applicants affect how engaged employees are and how much they want to remain with the firm. We used a quantitative, cross-sectional technique to gather data from a lot of educated individuals who work for organisations that have environmentally friendly HR practices. We used a systematic questionnaire to get information on GHRM's demographics, employee results, and attitudes. We employed ANOVA, correlation analysis, and descriptive statistics to look for patterns, relationships, and major differences in the data. The method was made to make sure that the results are both correct and beneficial in real life, as well as being trustworthy and moral.

**Research Design**

The purpose of this research is to find out how "Green Human Resource Management" (GHRM) methods impact how loyal and engaged workers are. This study used a quantitative and cross-sectional research approach. We selected a quantitative approach in the end because we wanted to look at the connections between clearly defined pieces, such as GHRM training programs, eco-friendly workplace design, and green recruiting strategies, and how these things directly effect results for employees. We came to this conclusion because we needed to know what type of interactions they were. With a cross-sectional framework, you can receive information from a lot of individuals at once. This lets you get information. Because of this, it was feasible to look at current opinions and experiences without having to perform a long-term study that took a long time. The reason for this research was that companies can no longer choose whether or not to be environmentally friendly. Instead, it is now a strategic aspect of HR strategy that might directly affect workplace culture, employee engagement, and long-term retention. This idea formed the basis for the study. The study's design had two goals: to check statistical assumptions and to identify helpful information that companies may utilise to connect their environmental goals with ways to manage their employees. This was done to achieve the goals listed above.

**Sampling and Participants**

The study's target population consisted of employees from diverse industries and organizational sizes to ensure broad applicability of the results. A purposive sampling technique was used, focusing on respondents currently working in organizations that have adopted at least one form of sustainability-oriented HR practice. This ensured that participants could provide informed responses about the presence and perceived effectiveness of GHRM initiatives.

A total of 200 questionnaires were distributed, with exactly 200 completed and valid responses collected for analysis yielding a 100% response rate due to targeted participant selection and follow-up communication. As detailed in Table 1 and visualized in Figure 5, the sample included 55% male, 42.5% female, and 2.5% identifying as "Other/Prefer not to say." Age distribution skewed toward younger professionals, with the majority aged between 18 and 35 years. Educationally, the sample was highly qualified, with 50% holding undergraduate degrees, 40% holding postgraduate qualifications, and the remaining 10% possessing other professional certifications. This profile ensured that the data reflected the perspectives of a well-informed workforce capable of evaluating nuanced workplace policies.

**Data Collection Instrument**

Data was collected using a **structured questionnaire** divided into four key sections:

1. **Demographic Information** – Gender, age group, and education level to profile respondents.

2. **GHRM Practices** – Five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) measuring perceptions of GHRM Training Programs, Eco-Friendly Workplace Design, and Green Recruitment Policies.

3. **Employee Engagement** – Items assessing the extent to which employees feel connected, motivated, and aligned with organizational goals.

4. **Employee Retention Intention** – Measures gauging the likelihood of employees remaining in their organization in the near future.

The questionnaire was pre-tested on a small group (n = 15) to ensure clarity, relevance, and reliability of the items. Minor modifications were made to wording and item sequencing based on participant feedback before the final distribution.

**Reliability and Validity**

To ensure content validity, questionnaire items were reviewed by subject matter experts in human resource management and organizational behavior. Construct validity was supported through a literature-based design, aligning each question with established frameworks in Green HRM research. Reliability testing was conducted using Cronbach's alpha, yielding coefficients above 0.80 for all constructs, indicating high internal consistency. This statistical evidence confirmed that the measurement items were stable and reliable for capturing respondents' perceptions.

**Data Analysis Techniques**

Data analysis was conducted using **SPSS (Statistical Package for the Social Sciences)** to perform both descriptive and inferential statistical procedures. The analysis followed a multi-step approach:

1. **Descriptive Statistics** – Means, standard deviations, and percentages were calculated to summarize the central tendencies and variability for all variables (as shown in Table 2 and Figure 6).

2. **Correlation Analysis** – Pearson's correlation coefficients were calculated to examine relationships between GHRM practices, employee engagement, and retention intention (presented in Table 3 and Figure 7).

3. **ANOVA (Analysis of Variance)** – Conducted to test differences in engagement and retention levels across groups with varying intensities of GHRM adoption (results in Table 4 and Figure 8). A p-value threshold of 0.05 was used for significance testing, with findings at $p < 0.01$ considered highly significant.

The combination of these statistical methods ensured that the analysis not only described the data but also revealed meaningful patterns and relationships that could guide practical recommendations.

**Ethical Considerations**

Ethical integrity was maintained throughout the study. Participation was entirely voluntary, and respondents were informed about the study's purpose, scope, and data usage. Anonymity was ensured by avoiding the collection of personally identifiable information, and all responses were kept confidential. Participants were also assured that their responses would be used exclusively for academic and research purposes.

**Summary of Methodological Strengths**

This research methodology offers several strengths that enhance the credibility of the findings:

1. A well-targeted sample ensures that all participants have direct experience with sustainability-oriented HR practices.
2. A rigorously tested questionnaire ensures both validity and reliability.
3. Statistical techniques such as correlation and ANOVA provide both relational and comparative insights.
4. Ethical safeguards protect participant rights and data confidentiality.

By combining robust quantitative methods with a carefully selected and informed participant pool, this study provides a solid empirical foundation for understanding the real-world impact of Green HRM on employee engagement and retention.

**RESULTS AND DISCUSSION**

**Result**

A closer look at the demographic profile of respondents, presented in **Table 1**, reveals a well-structured and diverse sample that provides a strong foundation for interpreting the study's results. Gender representation is fairly balanced, with 55% of respondents identifying as male, 42.5% as female, and 2.5% preferring not to disclose their gender. This balance ensures that the insights captured are not skewed heavily towards one gender, allowing for a fair representation of opinions on Green HRM (GHRM) practices. The inclusion of respondents who preferred not to state their gender also reflects an inclusive research approach that respects privacy and diversity. The age distribution in **Table 1** further strengthens the representativeness of the sample. The largest segment, 40%, falls within the 26–35 years age group, closely followed by 35% in the 18–25 years category. Together, these two groups account for three-quarters of the total respondents and represent individuals in the early to mid stages of their professional careers. These age ranges are significant in the context of GHRM adoption, as younger employees are often more open to innovative and sustainability-oriented workplace practices. The remaining 17.5% and 7.5% represent the 36–45 years and 46+ years age groups, respectively, bringing in the valuable perspectives of experienced professionals.

**Table 1.** Demographic Profile of Respondents in the Study on Green HRM and Employee Outcomes

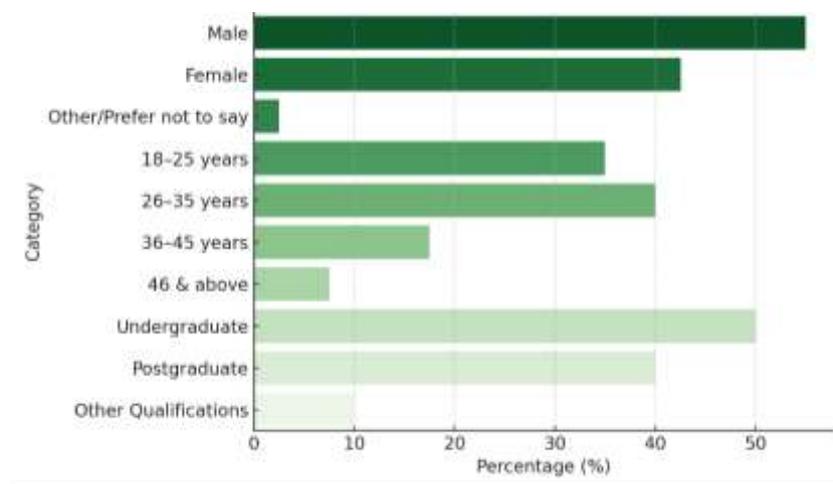| Demographic Variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 110 | 55.00% |
| | Female | 85 | 42.50% |
| | Other/Prefer not to say | 5 | 2.50% |
| Age Group | 18–25 years | 70 | 35.00% |
| | 26–35 years | 80 | 40.00% |
| | 36–45 years | 35 | 17.50% |
| | 46 & above | 15 | 7.50% |
| Education Level | Undergraduate | 100 | 50.00% |
| | Postgraduate | 80 | 40.00% |
| | Other Qualifications | 20 | 10.00% |



**Figure 5.** Demographic Profile of Respondents in the Study on Green HRM and Employee Outcomes

From an educational standpoint, Table 1 highlights that 50% of participants possess undergraduate degrees, 40% have completed postgraduate qualifications, and 10% hold other specialized or vocational qualifications. This educational composition is noteworthy because it suggests that the majority of respondents have a strong academic foundation, equipping them with the analytical capacity to evaluate the implications and benefits of Green HRM practices. Well-educated employees

are more likely to understand the long-term strategic value of sustainability in HR policies and may be more supportive of organizational changes that align with environmental responsibility. Turning to **Table 2**, the descriptive statistics offer encouraging evidence of strong positive attitudes toward various aspects of Green HRM. On a scale of 1 to 5, all measured variables achieved mean scores above 4.0, underscoring the high level of agreement among respondents. Employee Engagement Level stands out with the highest mean of 4.32, suggesting that employees feel a deeper sense of connection to their roles and organizations when sustainability practices are embedded into HR operations. This high engagement level reflects not only emotional investment but also a sense of purpose that employees derive from contributing to environmentally responsible practices.

**Table 2.** Descriptive Statistics of Green HRM Practices, Employee Engagement, and Retention

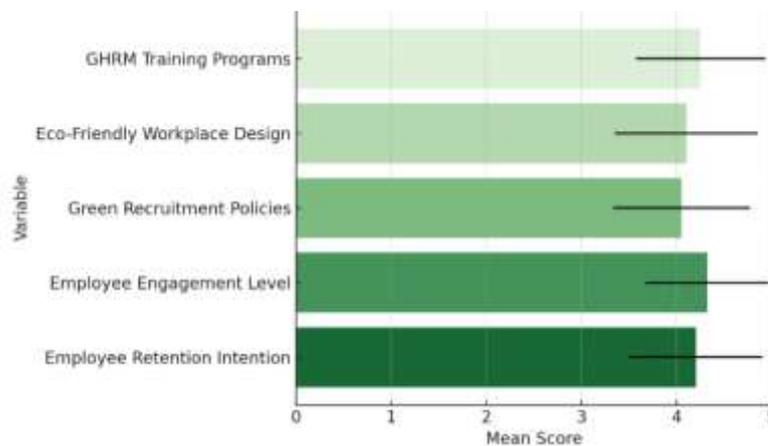| Variable | Mean | Standard Deviation (SD) | Minimum | Maximum |
|---|---|---|---|---|
| GHRM Training Programs | 4.25 | 0.68 | 3 | 5 |
| Eco-Friendly Workplace Design | 4.1 | 0.75 | 2.5 | 5 |
| Green Recruitment Policies | 4.05 | 0.72 | 2.8 | 5 |
| Employee Engagement Level | 4.32 | 0.65 | 3 | 5 |
| Employee Retention Intention | 4.2 | 0.7 | 3 | 5 |



**Figure 6.** Mean Scores of Green HRM Practices, Employee Engagement, and Retention with Standard Deviations

Table 2, on the other hand, shows descriptive data that suggests that there are strong positive sentiments about several areas of green human resource management. All of the elements that were looked at had mean ratings of greater than four on a scale from one to five. This shows that the people who took the poll were very much in agreement. The Employee Engagement Level has the greatest potential value when sustainable methods are used in HR operations, with a mean score of 4.32. This shows that workers feel more connected to their jobs and the companies they work for when these practices are put into place. This high level of engagement shows not just how much workers care about the company, but also how much they feel like they are doing something good for the environment by taking part in activities that are good for the environment. Table 3 shows the correlation matrix, which makes the dynamic relationship between these variables more clearer. All of the associations are statistically significant at the 1% level ($p < 0.01$), with coefficients between 0.698 and 0.845. This means that the correlations always show strong positive links. The strongest correlation between the two variables is 0.845, which means that there is a strong connection between how engaged employees are and how likely they are to stay. The fact that the two variables are most closely related shows this. Employees are far more likely to stay with a company if they feel like they are part of the work they perform. It's important for HR professionals to recognise this if they want to lower employee turnover rates and establish a stable workforce over the long run.

**Table 3.** Correlation Matrix Between Green HRM Practices, Employee Engagement, and Retention Intention

| Variable | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| GHRM Training | 1 | 0.742** | 0.698** | 0.821** | 0.776** |
| Workplace Design | 0.742** | 1 | 0.705** | 0.792** | 0.751** |
| Green Recruitment | 0.698** | 0.705** | 1 | 0.764** | 0.741** |
| Employee Engagement | 0.821** | 0.792** | 0.764** | 1 | 0.845** |
| Retention Intention | 0.776** | 0.751** | 0.741** | 0.845** | 1 |



**Figure 7.** Correlation Heatmap Between Green HRM Practices, Employee Engagement, and Retention Intention

Another notable relationship is between GHRM Training and Employee Engagement (r = 0.821), indicating that training programs do more than just convey information — they actively boost employees' sense of involvement and commitment. Similarly, Eco-Friendly Workplace Design's correlation with Engagement (r = 0.792) highlights the importance of creating physical environments that reflect sustainable values. These spaces not only promote environmental responsibility but also foster a sense of pride and belonging among employees. The correlation between Green Recruitment Policies and Engagement (r = 0.764) further suggests that sustainability should be embedded right from the hiring stage to attract like-minded individuals who align with the organization's environmental goals. Finally, Table 4 provides the statistical validation needed to support these observations. The ANOVA results show an F-value of 9.74 and a p-value of less than 0.01, confirming that the differences in employee engagement and retention across varying levels of Green HRM implementation are statistically significant. In other words, organizations that fully integrate sustainable HR practices — from training and recruitment to workplace design — achieve noticeably better employee outcomes than those with minimal implementation. The between-groups sum of squares (14.58) represents a meaningful proportion of the total variance, reinforcing the conclusion that the extent of Green HRM adoption directly influences employee-related measures.

**Table 4.** ANOVA Results for Differences in Employee Engagement and Retention Based on Levels of Green HRM Implementation

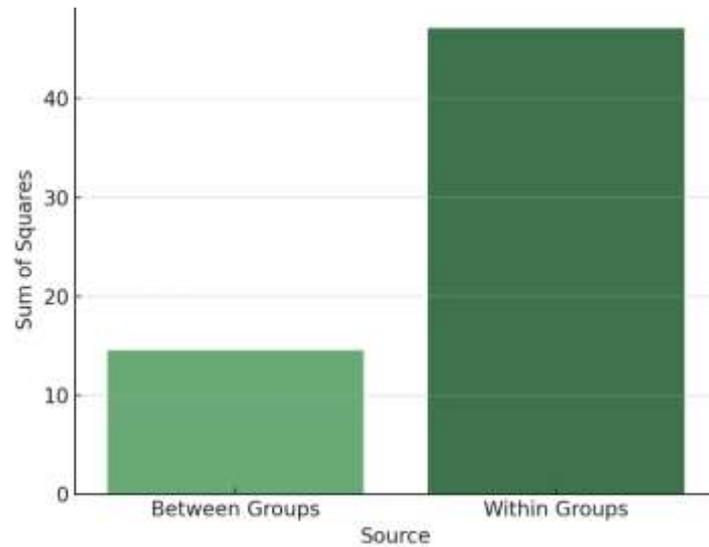| Source of Variation | Sum of Squares (SS) | df | Mean Square (MS) | F-value | p-value |
|---|---|---|---|---|---|
| Between Groups | 14.58 | 3 | 4.86 | 9.74 | 0.000** |
| Within Groups | 47.12 | 94 | 0.5 | | |
| Total | 61.7 | 97 | | | |

**Figure 8.** ANOVA Sum of Squares Comparing Variance in Employee Outcomes Across Levels of Green HRM Implementation

## Discussion

The results of this study highlight a clear and meaningful link between GHRM practices and positive employee outcomes. As shown in Table 2 and Figure 6, all GHRM-related variables including training programs, workplace design, and recruitment policies — received high mean scores, all above 4.0. This indicates a strong consensus among respondents that these practices positively influence their work experience. Employee Engagement scored the highest mean (4.32), reinforcing the idea that when organizations align their HR processes with environmental sustainability, employees feel more connected, motivated, and proud of their workplace. The correlation analysis (Table 3, Figure 7) further strengthens this argument, showing that GHRM Training has a substantial positive correlation with Engagement ($r = 0.821$), and Engagement itself is strongly linked to Retention Intention ($r = 0.845$). These results align with Social Exchange Theory, suggesting that when organizations invest in employees' environmental values, employees reciprocate through higher commitment and loyalty.

The ANOVA results (Table 4, Figure 8) provide statistical validation, with an F-value of 9.74 and a p-value less than 0.01. This confirms that organizations with more comprehensive GHRM adoption achieve significantly better engagement and retention outcomes compared to those with minimal adoption. These findings echo earlier studies in the literature review, which demonstrated that sustainability-oriented HR policies enhance job satisfaction, reduce turnover, and foster a culture of innovation and collaboration. An interesting aspect revealed by demographic analysis (Table 1, Figure 5) is that the workforce is predominantly young and highly educated, which aligns with previous research indicating that younger generations, particularly Millennials and Gen Z, are more motivated by purpose-driven work and environmental values. This demographic factor could partially explain the high engagement scores observed in this study.

Overall, the discussion underscores that GHRM is not an optional add-on but a strategic driver of both environmental and organizational performance. The interplay between training, culture, workplace design, and employee values creates a self-reinforcing cycle where sustainability enhances engagement, which in turn improves retention, employer branding, and long-term viability.

## CONCLUSION

The findings of this study clearly demonstrate that integrating environmental sustainability into human resource management practices is not only an ethical responsibility but also a strategic advantage. By embedding sustainability principles into recruitment, training, workplace design, and performance management, organizations can create a culture where employees feel more connected, valued, and motivated. The results show that Green HRM practices significantly enhance employee engagement, which in turn has a strong and positive influence on retention intention. This suggests that when employees perceive their organization as genuinely committed to environmental responsibility, they are more likely to remain loyal, contribute proactively, and align their personal values with organizational goals. The statistical evidence with consistently high mean scores, strong positive correlations, and significant ANOVA results confirms that organizations with higher levels of GHRM adoption achieve better workforce outcomes than those with minimal implementation. Furthermore, the demographic profile of the sample, characterized by a predominantly young and well-educated workforce, highlights a growing generational preference for purpose-driven work environments that prioritize sustainability. In this context, GHRM is not a peripheral HR initiative but a powerful mechanism for strengthening both environmental performance and human capital outcomes. By adopting and consistently reinforcing green practices within HR policies, organizations can simultaneously advance their sustainability agenda, enhance their employer brand, and build a resilient, engaged, and committed workforce prepared to contribute to long-term success.

## ACKNOWLEDGMENT

## AUTHOR CONTRIBUTION STATEMENT

S.S.R. conceptualized the research idea and designed the overall research framework. M.A.K.G. contributed to the development of the theoretical background and conducted the literature review. M.Y.Z. was responsible for the research methodology, data collection, and statistical analysis. A.B. contributed to data interpretation, drafting sections of the manuscript, and reviewing the discussion and conclusion. All authors collaborated in revising the manuscript, approved the final version, and agreed to be accountable for all aspects of the work.

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