

CAN GREEN HRM ALONE CREATE GREEN EMPLOYEES, OR DOES GREEN LEADERSHIP MAKE THE DIFFERENCE

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Abstract

The concept of Green HRM has been researched in manufacturing and service industries, but few studies have specifically examined how to make a greenhouse workplace Green. This study attempted to examine the role of Green HRM practices in achieving the results of the environment and the organization in the greenhouses. Data were collected via cross-sectional survey by using a structured questionnaire from 51 Textile firms. The results indicated that respondents have positive perception of the Green HRM practices as their overall mean score is 3.89. The three most important Green HRM dimensions were green recruitment and green training, where organizations are more and more interested in recruiting environmental-friendly employees and training them in environmental knowledge. The study results indicate that the role of Green HRM practices in the development of an environmentally responsible employee and enhancement of sustainable greenhouse performance is significant. The research proposes that environmental leadership and green training need to be reinforced, that environmental considerations should be embedded in employee performance assessment and that employees should be involved in environmental programs. The overall results reveal that employees are an important asset to realize long-term environmental sustainability and organizational success.

Introduction

1.1 Background of the Study

Greenhouse Human Resource Management is the management of human resources in the greenhouse, nursery and hydroponic greenhouse and other controlled environment greenhouse systems. In these workplaces the employees have to plant, harvest, irrigate and package as well as maintain environmental conditions like temperature, humidity, pest control measures, water use and energy efficiency. Hence, HRM becomes an important component in the enhancement of productivity, sustainability, employees' performance and environmental impacts, within greenhouse companies.

Agriculture continues to be the world's top occupation. In 2022, the agriculture sector employed about 892 million people globally (26.2% of the global workforce) (FAO, 2024). According to ILO, there are also around one billion people employed in agriculture around the world, of whom almost 450 million are paid (ILO, 2024). The figures indicate that the problem of agricultural employment is not only an economic problem, but also a human resources problem.

The significance of greenhouse farming is growing because it enables the production of crops in a controlled environment and contributes to achieving food security in areas facing climate change-related challenges, water scarcity, and limited availability of productive land. The advantages of CEA are the ability to grow more food on less land, but it is also a land-intensive technology that demands expertise, high capital investment, technical training, and resource management efficiency (UNDP, 2025). This is particularly critical for HRM due to the fact that even the most sophisticated greenhouse technology would be ineffective without trained, motivated and environmentally responsible employees.

1.2 Research Context

Many HRM issues have been identified in the real-life context of the greenhouses. Labour shortage is one of the biggest issues especially in the greenhouse and nursery sector, where production relies on timely planting, crop management, harvesting and packaging. Labour costs in greenhouse and nursery production is much higher than the average of all farms in

the United States (USDA ERS 2025). This means that substandard recruitment, retention, and training can directly drive up costs and lower greenhouse performance.

A second issue is that of employees' environmentally responsible behaviour. Frequent contact occurs among greenhouse workers with water, fertilizers, pesticides, plastic materials, electricity, and heating/cooling systems. Unless trained appropriately, greenhouse farms can suffer from water waste, incorrect use of chemicals, loss of crops, unsafe working conditions and increased energy costs. To sustain greenhouse operations, it is therefore essential that employees behave in an environmentally friendly way, including resource saving measures, environmental learning and reporting environmentally harmful behaviour (Zhang et al., 2021).

1.3 Greenhouse HRM and Sustainability

This study is supported by the concept of Green Human Resource Management, a strong theoretical basis. Tang et al. (2018) found five dimensions of GHRM: green recruitment and selection, green training, green performance management, green pay and reward, and green involvement. The dimensions can be incorporated into the workplace of the greenhouses by recruiting environmental aware employees, training them in greenhouse work that is safe and sustainable, assessing their environmental behaviour, incentivizing green behaviour, and engaging them in problem solving.

In the same way, Singh et al. (2020) took the opportunity to discuss the Ability–Motivation–Opportunity framework and how it helps build the green ability, green motivation and green opportunity of employees. Green ability can encompass a knowledge of irrigation efficiency, pesticide safety, crop hygiene, and waste reduction in greenhouse businesses. Rewards for reducing resource waste or improving crop quality can be in the form of green motivation. Green opportunity could involve employee involvement in team meetings, environmental suggestions and innovation in the work processes related to the green house.

1.4 Role of Leadership and Work Climate

Leadership also plays a role in Greenhouse HRM. Green transformational leadership is a leadership style that motivates employees through environmental plans and gives them a clear environmental vision, helps them adopt green ideas, and encourages them to strive for

environmental goals (Chen and Chang, 2013; Singh et al., 2020). This leadership can include introducing workers to the importance of minimizing waste from chemicals, handling chemicals safely, saving water, and recommending enhancements in crop management in a greenhouse situation.

An external factor that is important is work climate. Norton et al. (2014) concluded that the perceptions of green work climate impact green employee behaviour. Working in an organization and with co-workers who prioritize environmental sustainability will prompt them to act in an environmentally responsible way. In a Green Work Climate in greenhouse farms a positive attitude can be adopted to report irrigation pipes that have been broken, to turn off unnecessary electricity, to not use unnecessary pesticides and to support co-workers to follow the environmental rules.

1.5 Problem Statement

Although the role of agriculture in greenhouse is gaining importance, many greenhouse businesses still manage people in the traditional HRM practices. Those practices tend to be limited to attendance, pay, and completing assigned tasks, and not to pay attention to environmental consciousness, green training, employee involvement, and measuring based on sustainability standards. This results in a gap between the technology for the greenhouses and employee behavior. For instance, drip irrigation systems can be installed in a greenhouse but if the workers are not trained in checking for leaks or water pressure, then the technology can actually result in more water loss.

Literature on Green HRM is mostly concentrated in manufacturing companies, SMEs, hotels, universities and general organizations (Tang et al., 2018; Kuo et al., 2022; Singh et al., 2020). Little research, however, focuses specifically on the workplace in a greenhouse environment where the level of environmental performance is directly linked to what each employee does every day. The present study aims to fill this gap by analyzing the relationship of the HRM practices and the employee's green behaviour, green innovation and performance of the green house.

1.6 Research Novelty

This study has novelty value in the application of the concepts of Green HRM in the green house agriculture sector. Greenhouse businesses have specific problems related to the seasonal nature of the labor market, heat stress, pesticide exposure, water conservation, energy use, and crop quality pressure, which are not seen in manufacturing companies. The present study examines critically the role of HRM in making the workers of the greenhouses more skilled, motivated and environmentally responsible.

Table 1.1 lists the real world problems addressed by Greenhouse HRM.

Problem in greenhouse workplaces	HRM relevance
Labour shortage	Recruitment, retention, and workforce planning
High energy and water use	Green training and monitoring
Pesticide and safety risks	Safety training and performance appraisal
Low employee motivation	Rewards and recognition
Poor environmental behaviour	Green culture and employee involvement

1.7 Aim of the Study

This research aims to explore the role of Greenhouse Human Resource Management practices in employee green behaviour, green innovation and sustainable greenhouse performance. The study emphasizes how recruitment, training, performance management, rewards, employee involvement, leadership and greenery of work climate can enhance human and environmental outcomes in greenhouses.

2.2 Concept of Greenhouse Human Resource Management

HRM is the policies and practices involved in recruitment, training, motivation, evaluation and retention of employees. HRM in a greenhouse business is more specialized since the employees are employed in controlled-environment agriculture systems that require technical knowledge, awareness of the environment and safety practices. As opposed to open field cultivation, working in the greenhouse requires climate control, management of irrigation systems, monitoring of crop diseases, fertilizers, pesticides and harvest timetables. Hence, the performance of employees is closely related to crop quality, resource utilisation and environmental sustainability.

Greenhouse HRM can be associated with Green HRM as they both have the focus of employee involvement in environmental management. Tang et al. (2018) designed a validated Green HRM scale and was able to identify five dimensions: green recruitment and selection, green training, green performance management, green pay and reward and green involvement. They are applicable to workplaces within the greenhouse industry as workers are not only required to be able to perform physical tasks but also be trained to use water, energy, chemicals and greenhouse technology in a sustainable way (Tang et al., 2018; Lawter et al., 2025).

Recent research has revealed that GHRM has emerged as a strategic tool that can enhance organizational sustainability. Efranto et al. (2026) highlighted that from the last decade (2015-2025) the research in GHRM is increasingly focused on three main themes: GHRM practices, employee green Behaviour, and organizational sustainability, Likewise Lawter et al. (2025) identified that GHRM influences a number of organizational performance indicators, such as environmental performance, sustainable performance, firm performance, and green innovation. The results confirm a view of HRM as a means to support sustainability, not merely an administrative process.

2.3 Theoretical Foundation: RBV and AMO Theory

The Resource Based view is the basis of why organizations are able to achieve competitive advantage by developing resources that are valuable, rare, and hard to imitate. HRM is one of the most critical strategic resources as it has a significant impact on the organizational outcomes which are influenced by the knowledge, skills, motivation and behaviour of employees (Barney, 1991; Singh et al., 2020). Understanding crop management, water conservation, pest control, and environmental safety, trained employees who can become a source of competitive advantage can be found in the greenhouses.

Table 2.2: Key Variables Used in This Study

Variable	Definition	Relevance to Greenhouse HRM
Greenhouse HRM Practices	HR policies that support sustainable employee behaviour	Helps recruit, train, motivate, and involve greenhouse workers
Green Transformational	Leadership that inspires employees toward	Encourages employees to follow sustainable greenhouse

Leadership	environmental goals	practices
Green Work Climate	Employees' perception that the workplace supports environmental responsibility	Builds a culture of saving water, reducing waste, and following safety standards
Employee Green Behaviour	Employee actions that reduce environmental harm	Includes saving water, reducing chemical misuse, and reporting unsafe practices
Green Innovation	New or improved green processes, practices, or technologies	Includes drip irrigation, biological pest control, renewable energy, and digital monitoring
Greenhouse Performance	Productivity, crop quality, safety, and environmental performance	Shows whether HRM practices improve both employees and greenhouse outcomes

Another informative base is the Ability–Motivation–Opportunity theory. Builder of the AMO theory, employee performance is better when organizations build employee ability, bolster employee motivation, and offer chances for employee participation (Appelbaum et al., 2000). Singh et al. (2020) introduced AMO theory for GHRM, which splits GHRM practices into green ability, green motivation and green opportunity. Green ability can be, for greenhouse HRM, training in climate control and safe handling of chemical products; green motivation can be the offering of rewards for reducing waste; and green opportunity can be the involvement of employees in problem-solving and environmental decision making.

The two theories are complimentary. RBV suggests that skilled and environmentally responsible employees are valuable resources and AMO suggests that HRM practices can develop them. Hence, this study incorporates both of these approaches to understand the effect of Greenhouse HRM practices on Green Behaviour, Green Innovation, and Sustainable Greenhouse Performance (Singh et al., 2020; Zihan, 2024).

2.4 Greenhouse HRM Practices

2.4.1 Green Recruitment and Selection

Green recruitment and selection is recruitment and selection of employees who are environmentally aware, willing to learn sustainable practices and are committed to responsible work behaviour. For greenhouse enterprises, physical capabilities are not the

only factors that should be taken into account, but also attention to detail, safety awareness, following technical procedures and interest in sustainable agriculture. Tang, et al. (2018) stated that green employer branding and applying environmental selection criteria can attract green candidates to organizations.

In the case of greenhouse cultivation, the value of recruitment is even higher since one of the main problems is labour shortage. Poor environmental awareness and technical learning capacity could result in poor crop handling, misuse of chemicals, water wastage, and low productivity if greenhouse firms fail to check these aspects in their workers. Other studies on controlled-environment agriculture also indicate that CEA systems need skilled labor, as careful management of water, energy, and nutrients, as well as technology, are essential (Boyd, 2025; Nwanaju, 2025).

2.4.2 Green Training and Development

Green training is training that enhances employees' environmental knowledge, technical skills and working practices. Greenhouse training can include irrigation efficiency, disease control, biological pest control, safe application of pesticides, energy conservation, hygiene, waste management and crop quality. Tang et al. (2018) noted that green training boosts environmental awareness, skills and expertise of employees.

The effectiveness of green training in enhancing staff attitudes and environmental outcomes has been backed up by several studies. Al-Sabi et al. (2024) reported that the practices of GHRM affect the environmental performance indirectly through the channels of job satisfaction and pro-environmental behaviour. Similarly, Yunaningsih (2024) proposed that environmental support, green knowledge sharing, and green commitment can give the impetus to GHRM to stimulate innovative work behavior. The results are applicable for greenhouse farms as training can transform sustainability policies into daily working practice.

2.4.3 Green Performance Management

The practice of green performance management is the measurement of workers' performance on the basis of their contribution to environmental objectives. This can involve tracking if staff minimizes water loss, observes chemical safety procedures, upholds crop hygiene, reports equipment issues, and encourages energy conservation in the greenhouse.

Tang et al. (2018) stated that green targets, responsibilities and indicators should be added to the performance tools.

This practice is significant, as many greenhouse issues are related to poor monitoring and accountability. For instance, a drip irrigation system could be set up, and if no employee is assessed for leak detection, the farm could be wasting water. Likewise, pesticide safety training might be provided to greenhouse workers but if not monitored, unsafe use can occur. Thus, green performance management establishes accountability and correlates the employee conduct to the sustainability of greenhouse gas (Tang et al., 2018; Shahzad et al., 2025).

2.4.4 Green Rewards and Recognition

Rewards that are provided to employees for their contribution to the environment are called green rewards. Rewards can be provided for saving water, minimising crop waste, hygiene, early detection of pest issues, early identification of energy saving opportunities, and safe working practices, in greenhouse businesses. According to Tang et al. (2018), rewards like awards, public acknowledgment, time off or certificates can be used to motivate workers to engage in environmental management.

This can be also supported with the recent GHRM research for the motivating aspect of rewards. Numerous studies have been conducted on the connections between GHRM and employee green behaviour, with some indicating that GHRM practices are associated with employee green behaviour, as reported by Veerasamy (2024), while others suggest that green innovation plays a mediating role between GHRM and sustainable performance, as reported by Zihan (2024). Within a greenhouse environment, rewards can help to encourage employees to do more than just their regular jobs and think outside the box to solve actual problems occurring in the work environment.

2.4.5 Green Employee Involvement

Green involvement includes providing employees with the chance to be involved in environmental decision-making and solving problems. In a greenhouse farm, the first person to see signs of a leak in the irrigation system, pests, temperature issues, inadequate ventilation, plant damage, or incorrect use of chemicals is typically the person working there.

Thus, managers can benefit by involving them in team meetings and improvement programs and help them become aware of the problem at an early stage and minimize losses.

Tang et al. (2018) suggested that the employee involvement is composed of green vision, learning climate, communication channels, problem-solving groups, and green action teams. This is corroborated by Norton et al. (2014) who revealed that Green work climate perceptions have an impact on employees' green behaviour. Employee involvement in practical greenhouse situations can help to enhance both environmental performance and employee motivation as the employee values the knowledge and observations obtained.

Table 2.1: Summary of Greenhouse HRM Practices

HRM Practice	Meaning in Greenhouse Context	Practical Example
Green Recruitment and Selection	Hiring workers with environmental awareness and ability to learn sustainable greenhouse practices	Selecting employees who understand water saving, safe pesticide use, and crop hygiene
Green Training and Development	Improving employee knowledge about sustainable and safe greenhouse work	Training workers on irrigation systems, biological pest control, chemical handling, and waste reduction
Green Performance Management	Evaluating employees according to environmental and operational performance	Checking whether employees reduce water waste, follow safety rules, and report system faults
Green Rewards and Recognition	Rewarding employees for supporting sustainability goals	Giving appreciation, bonuses, or certificates for saving resources or suggesting green improvements
Green Employee Involvement	Allowing employees to participate in environmental problem-solving	Involving workers in team meetings about pest control, water leakage, and energy use

2.5 Green Transformational Leadership

Green transformational leadership is a leadership style that motivates employees to develop green performance, sets out the environmental vision, encourages green ideas and inspires employees to do more than just their assigned tasks (Chen & Chang, 2013). For greenhouse workplaces, green transformational leadership could be associated with directing staff to

use irrigation methods that are sustainable, to lower chemical waste, to use clean harvesting methods and recommend better crop production.

Chen and Chang (2013) reported that the positive relationship between green transformational leadership and green creativity and green product development performance. Moreover, Singh et al. (2020) discovered that the positive relationship between green transformational leadership and green ability, green motivation, and green opportunity. The results indicate that leadership is not independent from HRM, but rather influences the manner in which HRM is practiced and embraced by employees.

But other articles indicate that leadership is not enough. Leaders may encourage employees to change their behaviour by setting environmental targets but if the organisation does not offer employees training, rewards and participation opportunities, then behaviour may not change. Thus, HRM in a greenhouse should be linked with environmental vision and should be made a part of recruitment, training, appraisal, reward, and involvement process (Singh et al., 2020; Zafar et al., 2024).

2.6 Green Work Climate

The Green work climate entails the employees' perception that their organization and co-workers are committed to supporting environmental sustainability. Norton et al. (2014) created an 8-item green work climate scale and established the climate of the organization and among co-workers as a mediator between the implementation of sustainability policies and green employee behaviour. This increases the chances that employees will act in an environmentally responsible way when they see management and other employees are doing so.

Green work climate can be explored in greenhouse situation through everyday practices. If, for instance, supervisors remind workers to conserve water, co-workers report chemical accidents and managers thank employees for their green ideas, workers might feel that there is a culture of sustainability in the workplace. However, if there are no policies in place or managers are unaware of wasteful behaviour, employees may not be motivated to take a serious look at green behaviour. The role of green psychological climate in the relation of

GHRM and voluntary pro-environmental behaviour is also supported by recent studies (Zafar et al., 2024; Chouhan, 2025).

2.6 Green Work Climate

Green work climate is the perceptions of employees that their work organization and fellow workers are supportive of environmental sustainability. Norton et al. (2014) designed an eight item green work climate scale and concluded the results that the organizational climate and co-worker climate mediate the relationship between the sustainability policies and employee green behaviour. This translates to the fact that when employees observe an environment-friendly culture being promoted from management and among peers, they are more likely to act sustainably.

Green work climate can be seen in the daily practice, in the greenhouse environment. If supervisors remind workers to conserve water, co-workers report chemical spills, and managers value suggestions of best practices for going green, employees can feel that sustainability is part of the workplace culture. However, if environmental policies are merely theoretical and managers turn a blind eye to wasteful behaviour, their employees might not pay attention to green behaviour. The recent studies also validated the relationship between green psychological climate and voluntary pro-environmental behaviour with the mediation role of GHRM (Zafar et al., 2024; Chouhan, 2025).

2.7 Employee Green Behaviour

Employee green behaviour is described as any employee action that contributes to decreasing environmental damage and fostering sustainability. Zhang et al., (2021) located four factors of employee green conduct: green learning, individual conduct, influencing others and organizational voice. For greenhouse workplaces, the learning through green aspect can range from learning about pest control or water efficiency, to individual practice (reduction in waste), influencing others (caring to implement environmental rules by co-workers), or organizational voice (reporting environmentally harmful practices).

Employee green behaviour is crucial because sustainability of the greenhouse relies on the actions of employees every day. Incorporating technology like the automatic irrigation or climate control can help contribute to sustainability, but the workers have to manage and

maintain it and use them properly. One worker, who fails to report a broken irrigation line, can lead to water loss and damage to the crop, while another who reports a broken irrigation line early can prevent environmental and financial loss. Hence, the employee green behaviour is linked to the real GHG outcomes, which in turn is linked to HRM practices (Zhang et al., 2021; Veerasamy, 2024).

Table 2.3: Employee Green Behaviour Dimensions in Greenhouse Workplaces

Dimension	Meaning	Greenhouse Workplace Example
Green Learning	Employees learn about environmental protection and sustainable work	Learning how to reduce water use, manage pests safely, and prevent crop disease
Individual Practice	Employees personally follow green work practices	Turning off unnecessary lights, avoiding water waste, and using chemicals carefully
Influencing Others	Employees encourage co-workers to behave sustainably	Reminding co-workers to follow safety rules and reduce waste
Organizational Voice	Employees report or suggest improvements for environmental issues	Reporting irrigation leakage, unsafe pesticide use, or poor waste disposal

2.8 Green Innovation and Greenhouse Performance

Green innovation is a new or improved product, process or practice that results in a reduction in environmental harm. For greenhouse enterprises, green innovation can be water efficient irrigation systems, biological pest management, composting, renewable energy use, better ventilation systems, using recyclable packaging, or monitoring crop conditions digitally. Green innovation is essential due to the increasing energy, water, labour and input costs within the greenhouse.

Singh et al. (2020) revealed that green HRM practices positively affect green innovation, and green innovation positively affects environmental performance. Further, Aftab et al. (2023) also suggested that green innovation, environmental strategy, and pro-environmental behaviour are in support of the relationship between GHRM and environmental performance. Likewise, Biggi et al. (2023) demonstrated that environmental innovation can have a varying impact on company performance depending on whether the innovation is resource-saving, pollution-reduction or regulation.

Green innovation is not only a technological challenge in a greenhouse farm, but also a human resources challenge. Staff needs to be trained to use new systems, motivated to embrace change and engaged in the process of identifying process improvements. Hence, HRM, leadership, employee's behaviour and work climate are important factors that contribute to the success of green house innovation (Zihan, 2024; Shahzad et al., 2025).

2.9 Critical Evaluation of Previous Literature

The findings from previous studies suggest that GHRM has a positive effect on the employee green behaviour, green innovation and environmental performance. But, most studies have focused on manufacturing companies, hotels, universities, textile companies and SMEs, and not greenhouse agriculture. This leaves a context gap as HRM issues in the greenhouse are very different from those in other agricultural settings, including: Seasonal labour requirements, heat stress, pesticide exposure, water efficiency, energy use, and quality requirements for crop production.

Another constraint is the many studies of GHRM as it is applied at the organizational level, which do not help to gain an operational understanding of HRM in the greenhouse. Green training for a hotel can include waste sorting and energy saving, while from a greenhouse, it could be fertigation, biological pest control, crop hygiene, pesticide safety and climate monitoring. So, GHRM results cannot be extrapolated for greenhouse without making some modifications.

Another deficiency is that current research tends to concentrate on environmental performance, but has not paid as much attention to real or occupational challenges like manpower shortage, staff retention, safety concerns, and skill shortages. Both environmental and human issues are important in greenhouse HRM, as sustainability relies on the capacity, willingness and opportunity of the workers to perform green tasks. This study addresses these gaps by specifically addressing the unique situation of greenhouse workplaces using concepts from the GHRM.

2.10 Research Hypotheses

There are several hypotheses that are suggested in this study based on the literature review, theoretical foundations, and conceptual framework.

H1: The influence of Employee Green Behavior (EGB) is significantly positive with Green Human Resource Management (GHRM).

H2: Green Human Resource Management (GHRM) has a significant positive effect on Green Psychological Climate (GPC).

H3: Green Psychological Climate (GPC) has a significant positive effect on Employee Green Behavior (EGB).

H4: Green Human Resource Management (GHRM) affects Green Psychological Climate (GPC) leading to Green Employee Behavior (EGB).

H5: Environmental Transformational Leadership (ETL) has a significant positive effect on Employee Green Behavior (EGB).

H6: The relationship between Green Human Resource Management (GHRM) and Employee Green Behavior (EGB) is positively moderated by Environmental Transformational Leadership (ETL) in the sense that the relationship strengthens as the leadership in ETL increases.

H7: Environmental Transformational Leadership (ETL) positively moderates the relationship between Green Psychological Climate (GPC) and Employee Green Behavior (EGB), and when Environmental Transformational Leadership is high, the relationship between them is stronger.

The hypotheses are built on the Resource Based View (RBV) theory and Ability-Motivation-Opportunity (AMO) framework. According to these theories, the improvement of environmental performance can be achieved via the development of environmentally responsible HR practices, the establishment of supportive psychological climate and leadership behaviours that inspire sustainability. Based on the hypotheses, the direct, mediating, and moderating relationships between Green Human Resource Management, Green Psychological Climate, Environmental Transformational Leadership, and Employee Green Behavior are examined.

2.11 Conceptual Framework

The conceptual framework used in this study is the Resource Based View (RBV) and Ability Motivation Opportunity (AMO) theory. The framework suggests that the practices of Green

Human Resource Management (GHRM) include the improvement of employee environmental awareness, skills, motivation and opportunities for them to act environmentally responsibly.

The model takes direct influence of GHRM practices on Employee Green Behavior (EGB) and indirect influence of GHRM practices on EGB through Green Psychological Climate (GPC). Green Psychological Climate is defined as workers' beliefs that their working environment cares about environmental sustainability and encourages environmentally responsible actions. A positive green psychological climate is more likely to lead to green behaviour by employees.

The framework also suggests an ETL as a moderator. Environmental transformational leaders demonstrate an environmental vision; influence employees' acceptance of sustainability; and inspire employees to pursue environmental objectives. Therefore, a positive relationship between GHRM practices and Employee Green Behavior is expected to grow stronger when strong environmental leadership is implemented, as well as a positive relationship between Green Psychological Climate and Employee Green Behavior if strong environmental leadership is implemented.

The conceptual framework indicates that effective green HRM practices, positive green psychological climate, and environmental transformational leadership can be effective strategies to enhance Employee Green Behavior. All of these elements help create and promote a sustainable and environmentally-friendly workplace culture.

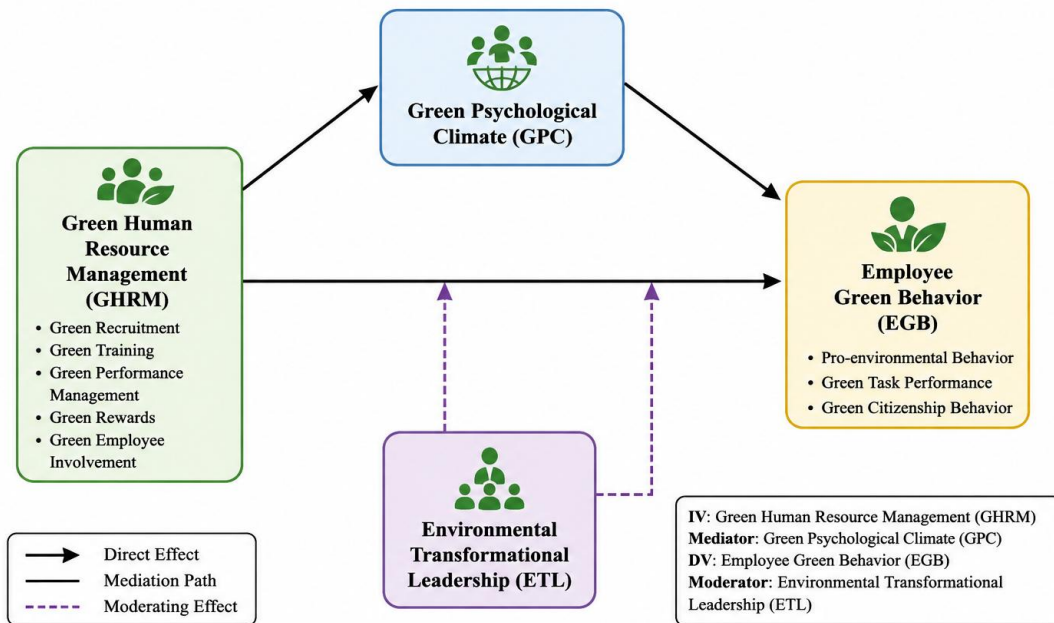


Figure 2.1 Conceptual Framework

2.12 Research Gap

Reviewed literature indicates that Green Human Resource Management (GHRM) is widely recognized as an important factor in promoting sustainability and Employee Green Behavior (EGB). However, most previous studies have examined GHRM in manufacturing, hospitality, education, and general organizational settings, while greenhouse agriculture has received limited attention in HRM research. Existing scales and theories provide useful guidance, but many of them were developed in non-greenhouse contexts.

Therefore, this study is valuable because it applies the concepts of Green Human Resource Management, Green Psychological Climate (GPC), Environmental Transformational Leadership (ETL), and Employee Green Behavior (EGB) to the greenhouse workplace. The novelty of the study lies in examining how GHRM practices can influence employee green behaviour directly and indirectly through Green Psychological Climate. In addition, the study considers the moderating role of Environmental Transformational Leadership in strengthening the relationship between GHRM, GPC, and EGB.

This research is also significant because greenhouse workplaces face practical challenges such as labour shortages, water wastage, chemical safety risks, high energy costs, crop quality pressure, and employee participation issues. By linking GHRM with these real

workplace challenges, the study contributes to both academic literature and practical greenhouse management.

Methodology

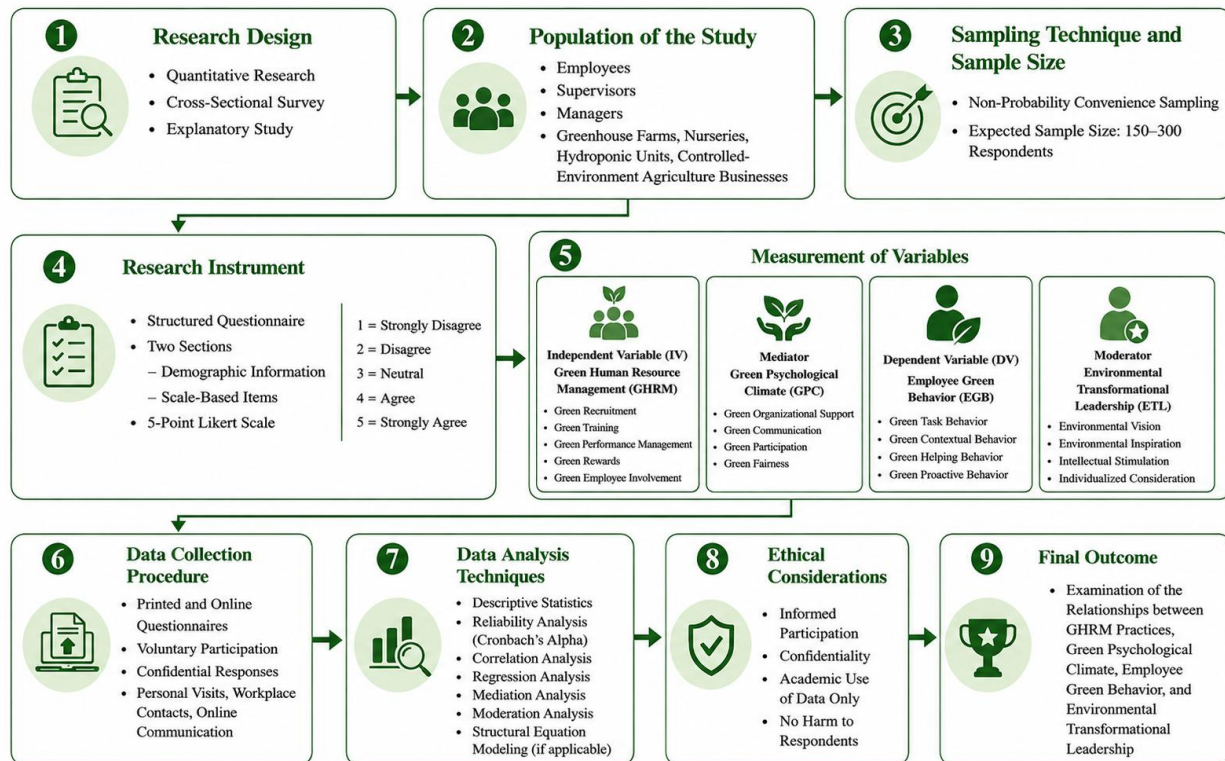


Figure 3.1 Methodology Diagram

3.2 Research Design

The type of study that was used in this research was quantitative research. When the researcher wants to measure relationships between variables with numbers, the quantitative research is suitable. The primary objective of this research is to investigate the effect of HRM practices of the greenhouses on employee's green behaviour and greenhouse performance. Hence, a pre-designed questionnaire is employed to gather data from the respondents.

This is a cross sectional study as data will be gathered at a single point in time. This design is popularly adopted for Green HRM and employee behaviour research because it enables the researcher to gather responses from large number of respondents within a short period of time (Tang et al., 2018; Singh et al., 2020). The research is also explanatory as it is focused on explaining the relationship between the Greenhouse HRM practices, green work climate, employee green behaviour, green innovation, and greenhouse performance.

3.3 Population of the Study

The subjects of this study are employees, supervisors and managers in the greenhouse farms, nurseries, hydroponic and controlled environment agriculture business. The respondents are good to study since they are directly involved in the operations of the greenhouse including harvesting, packaging, supervision of employees, environmental monitoring, pest control, irrigation, and crop production.

In the greenhouse, the people who are involved in the day-to-day operations are critical respondents as their behavior has a direct impact on water use, energy use, crop hygiene, pesticide safety and waste reduction. Supervisors and managers also included as they have a key role in the recruitment, training, performance assessment, motivation and implementation of environmental policies.

3.4 Sampling Technique and Sample Size

Non-Probability convenience sampling will be used in this study. This method is applicable since a complete sampling list of greenhouse employees and managers might not be readily available. Subjects will be selected according to their availability, willingness to participate and their direct involvement in greenhouse work.

The number of respondents required in this study is between 150-300. It is believed that this is an acceptable sample size for survey-based research particularly when descriptive statistical analysis, reliability testing, correlation, regression and model analysis are planned. Survey samples have also been used in previous Green HRM studies to examine relationship between HRM practices, leadership, innovation and environmental performance (Singh et al., 2020; Zhang et al., 2021).

3.5 Research Instrument

A structured questionnaire is used in this study as a research instrument. Using validated scales, the questionnaire is adapted to the context of the greenhouse. The questionnaire has two sections. The first portion contains demographic data including gender, age, education, job position, years of work experience and greenhouse organization type. The second part consists of scale-based questions concerning the main research variables.

The questionnaire consists of a 5 point Likert scale. The respondents will be asked to choose one answer for each statement:

3.6 Measurement of Variables

The survey variables are measured using modified questionnaire items adapted from previous validated studies. The items are adjusted according to the greenhouse workplace context so that the study can measure environmental human resource practices, psychological climate, leadership, and employee behaviour more accurately.

Green Human Resource Management (GHRM) is measured through items adapted from the Green HRM scale developed by Tang et al. (2018). This scale includes green recruitment and selection, green training, green performance management, green rewards, and green employee involvement. In this study, these items are used to examine how greenhouse organizations attract environmentally responsible employees, provide environmental training, include green goals in performance systems, reward environmental contributions, and involve employees in green decision-making.

Green Psychological Climate (GPC) is measured through items adapted from Norton et al. (2014). These items focus on employees' perceptions of whether their organization supports environmental responsibility, promotes green values, encourages environmental communication, and creates a workplace atmosphere where employees feel motivated to behave sustainably. In the greenhouse context, GPC reflects employees' perception that saving water, reducing waste, following environmental rules, and protecting the environment are valued by the organization.

Employee Green Behavior (EGB) is measured through items adapted from Zhang et al. (2021). The items cover green task behaviour, green helping behaviour, green proactive behaviour, green participation, and green voice behaviour. In this study, these behaviours are linked with greenhouse practices such as minimizing water wastage, safely using chemicals, reporting environmentally harmful activities, encouraging colleagues to follow green practices, and completing work tasks in an environmentally responsible way.

Environmental Transformational Leadership (ETL) is measured through items adapted from Chen and Chang (2013) and Singh et al. (2020). These items examine

how leaders communicate environmental vision, inspire employees to achieve environmental goals, encourage green ideas, support environmental learning, and motivate employees to participate in sustainability initiatives. In this study, ETL is considered a moderating variable that can strengthen the relationship between GHRM, GPC, and EGB.

3.7 Data Collection Procedure

Printed or online questionnaires will be used to gather data. The purpose of the study will be explained to the respondents before distributing the questionnaire. Respondents will be assured of confidentiality in their data and their use for academic purposes; participation will be voluntary.

The researcher will visit, meet, and/or contact the greenhouse employees, supervisors, and managers in person or online. The respondents will receive clear instructions on how to fill out the questionnaire. Completed questionnaires will be screened for incompleteness or invalid responses prior to analyses.

3.8 Data Analysis Techniques

The data that will be collected will be analyzed using appropriate statistical software (SPSS, AMOS). Data will be summarized with descriptive statistics first, as these provide a summary of the demographic information and responses. Frequency, percentage, mean and standard deviation will be computed.

Secondly reliability analysis will be carried out by Cronbach's alpha test. Generally an internal consistency of 0.70 is acceptable for Cronbach's alpha. Third, correlation analysis will be used to examine the relationship between variables. Fourth, the impact of Greenhouse HRM practices on employee green behaviour, green innovation and greenhouse performance will be tested through regression analysis.

Also, to check the distribution of data, histograms will be used. When the data is normally distributed, more testing of the model can be carried out. If the sample size is adequate, SEMs can be used to test the overall concept model.

3.9 Ethical Considerations

Ethics are crucial in survey research. There will be no compulsion for any respondents to take part. They will keep their personal information and identity

confidential. There will be no sensitive questions on the questionnaire which could be damaging to respondents. The data will be utilized solely for academic research and the results will be reported in a summarized form.

Data Analysis and Results

Of the 51 responses that were usable, 42 were from the Textile marketing, 10 were from textile manufacturing firms, and were from students. For analysis, each answer was analyzed for completeness and relevance. The questionnaire items were all on a Likert-type scale, giving a large pool of response items to detect general patterns of employee perceptions. The study is quantitative and descriptive, therefore, the results are presented in frequencies, percentages, mean and graphs.

Overall findings indicate that most environmental management/green workplace statements were accepted by the respondents. The mean scores of all major constructs were above 3.70, which indicates a positive response tendency. The average value of 3.00 or above is generally considered to indicate agreement or positive attitude in a Likert-type scale. Based on the findings it can be concluded that the surveyed organizations are practicing Green HRM practices to certain extent and employees are also aware of their environmental responsibility at their work place.

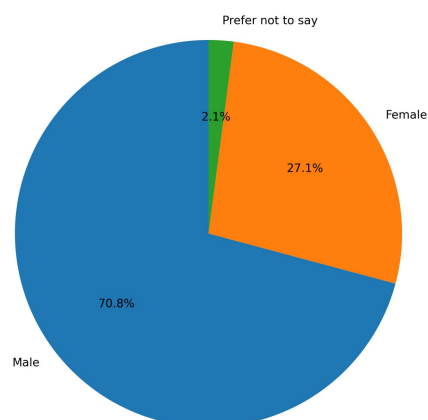
4.3 Demographic Profile of Respondents

The demographic profile gives background information on the respondents, as well as explains the nature of the respondents. Demographic factors were gender, age, education, work experience, organization/company, and department/position.

4.3.1 Gender Distribution

The gender distribution indicated that most of the responses were from males. A total of 51 respondents indicated: 34 male, 13 female, and 1 did not state. That is, about 70.8% of the respondents were male, and 27.1% female. 2.1% didn't say. This

Figure 4.1: Gender Distribution



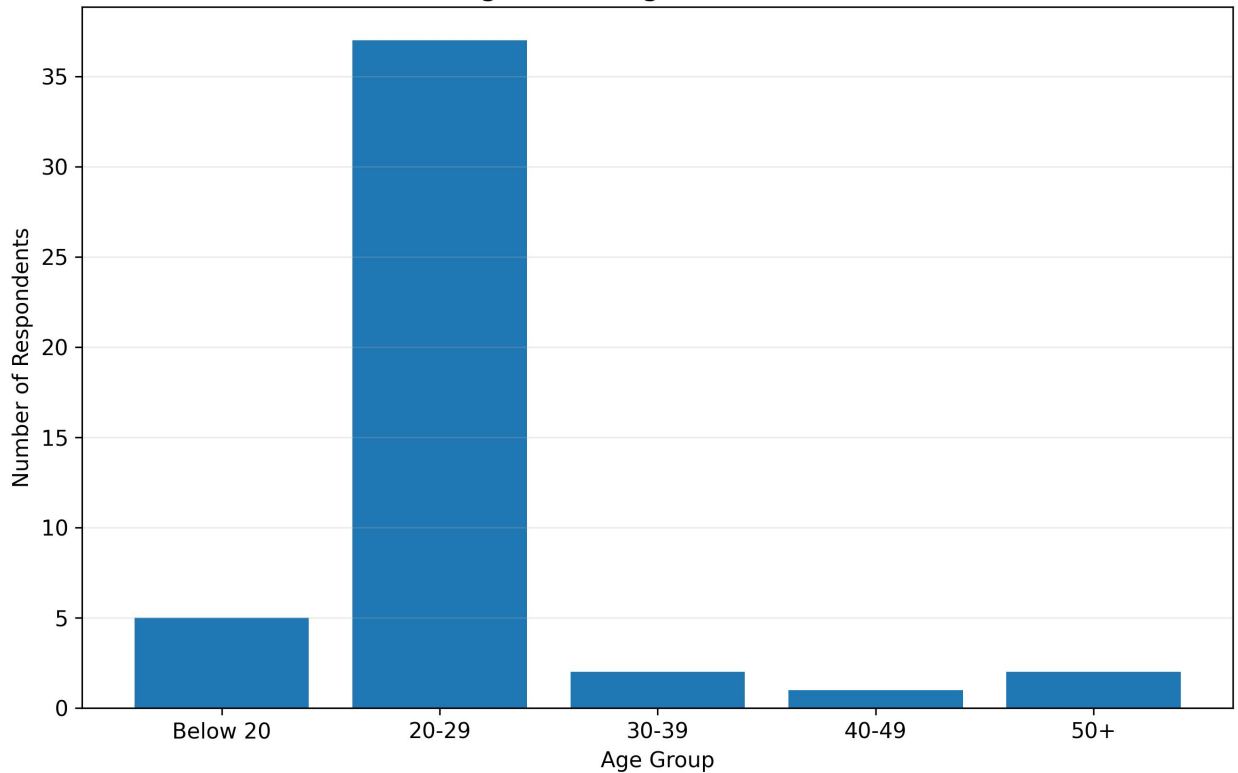
finding implies that males outnumbered females in this sample. This might reflect the nature of greenhouse, agriculture and working activities, in which men are more likely to be engaged in activities that are field-based or more involved in production activities. But the women respondents also suggest that women are involved in organisational and environmental management activities.

4.3.2 Age Distribution

The age distribution is a graph that shows the distribution of data among the various ages of the respondents. The largest number of respondents (37) were in this group. The five youngest individuals were under the age of 20, and fewer were aged between 30 and 39; 40 and 49; and 50 and +.

This result indicates that the sample was mainly composed of young workers. Young workers are more likely to embrace new on-site environmental practices, sustainable technologies, and green work programs. Younger workforce is expected to facilitate green practices since the adoption of green practices in HRM involves awareness, learning and behavioural change.

Figure 4.2: Age Distribution

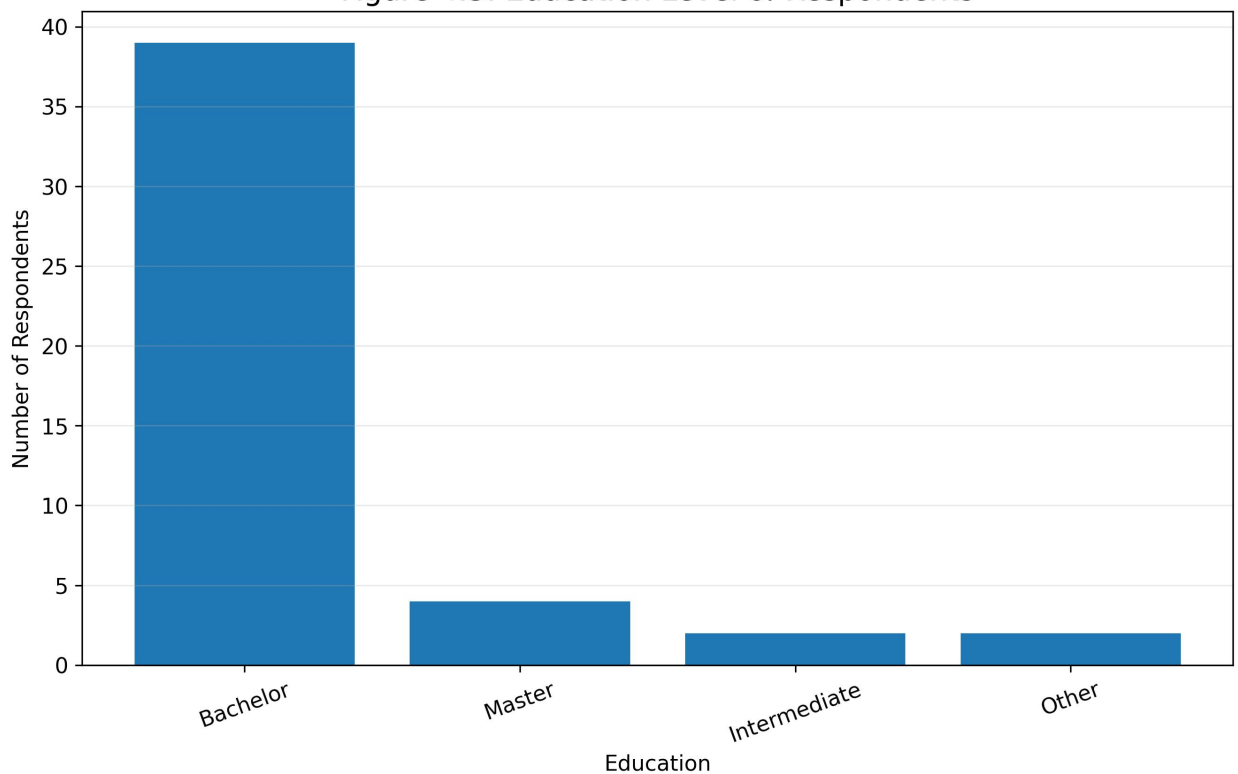


4.3.3 Education Level

The results of the education indicate that the majority of the respondents have a Bachelor's degree. This suggests that the sample was relatively educated and understood the policies and sustainability goals and the other HRM related practices of the environment. There were fewer respondents with Master's level education, intermediate education or other qualifications.

Education plays a significant role in Green HRM as the behaviour that is needed to be “green” in HRM is dependent upon awareness and understanding. Well-educated employees might be more easily able to understand green training, environmental performance indicators, and sustainable work systems. This corroborates Tang et al. (2018), who emphasized the importance of knowledge development and green training to Green HRM.

Figure 4.3: Education Level of Respondents

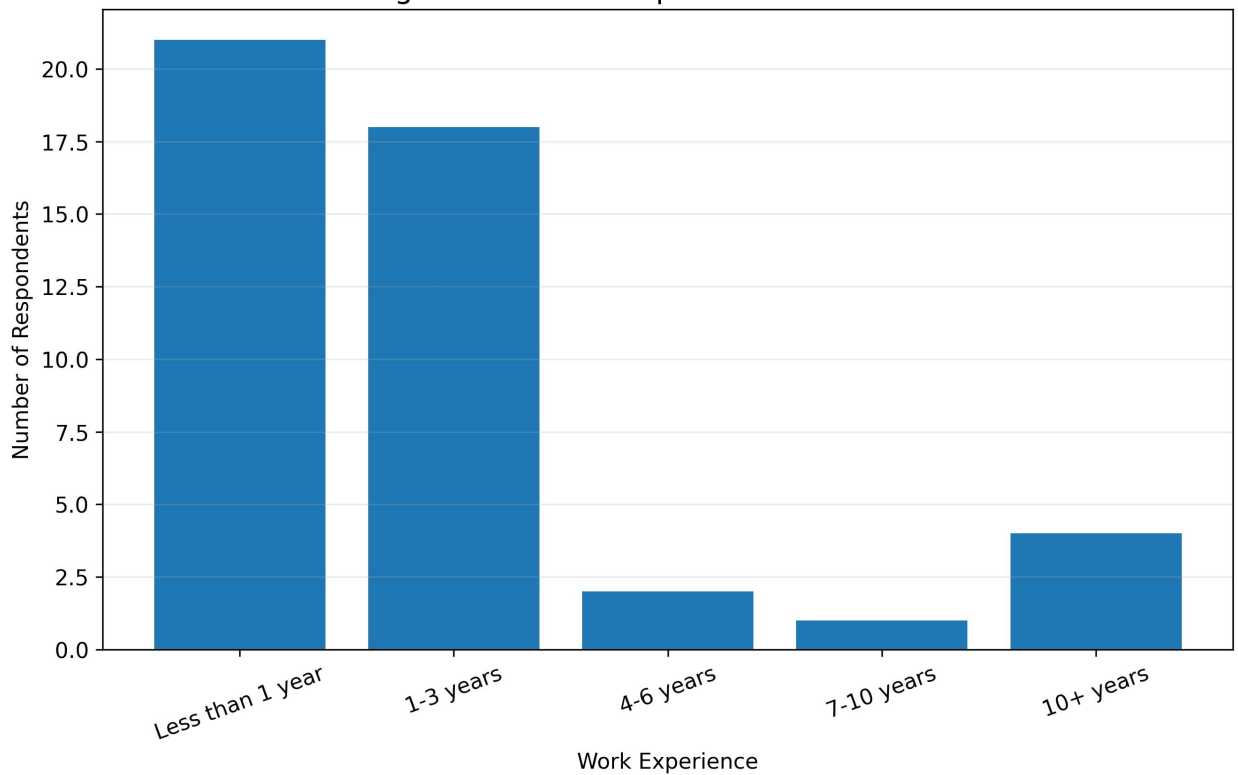


4.3.4 Work Experience

The work experience outcomes indicate that the majority of respondents had little work experience. 21 of the respondents had less than one year's experience, and 18 of the respondents had 1-3 years' experience. Only a small number of respondents had more than three years of experience.

This implies a high percentage of participants were young workers. This is significant as it is essential that new staff are trained, guided, supervised, and motivated. Green training at an early stage can help employees to acquire sustainable skills and behaviours from an early stage in their careers if the organisations provide them. This aligns with the Ability-Motivation-Opportunity model, which posits that employee performance will increase when organizations provide employees with ability, motivation and opportunity (Appelbaum et al., 2000; Singh et al., 2020).

Figure 4.4: Work Experience Distribution



4.4 Analysis of Green HRM Practices

The green HRM practices were assessed using 18 items related to the five areas of green HRM practices that are: green recruitment, green training, green performance management, green rewards and green employee involvement. The overall mean score of the Green HRM practices was 3.89. This suggests that there is a general consensus among the respondents on implementing environmentally responsible HRM practices in their organisations.

The results of green recruitment were the best with a mean score of 3.96 in the GHRM dimensions. This indicates that recruitment and selection efforts are being directed toward candidates with a positive attitude toward the environment or to those who would be happy to work at an environmentally conscious workplace. This is in line with Tang et al. (2018) that said green recruitment attracts employees who are mindful of the environment.

A mean score of 3.93 was found for green training. This indicates that the respondents found their organizations to offer training in environmental management, environmental awareness and relating environmental knowledge to workplace behaviour. Training is critical in the work carried out in greenhouses due to the use of resources like water, energy, fertilizers, pesticides and waste. Employees can waste resources, or engage in unsafe practices, if not properly trained.

The average for green performance management was 3.82. This is a positive score but still a bit less than recruitment and training. This suggests that organizations could start to agree on green performance indicators, but there is still potential for performance appraisal systems to be more explicitly linked with environmental goals. According to Tang et al. (2018), environmental goals and green performance indicators should be incorporated into the performance management system to enhance the accountability.

The mean score received for green rewards was 3.88. Here it can be discerned that there is some kind of recognition or benefit given to organisations for their environmental contributions. Rewards can encourage employees to save resources, minimize waste, comply with the environment regulation and bring green ideas. Reward systems are significant as they can motivate employees to act in ways that benefit the environment goals (Renwick et al., 2013).

The mean score for Green employee involvement is 3.87. This means that workers are provided with opportunities to be involved in environmental management, problem solving and environmentally themed communication. Employee involvement is crucial, as employees are often witness to actual issues on the

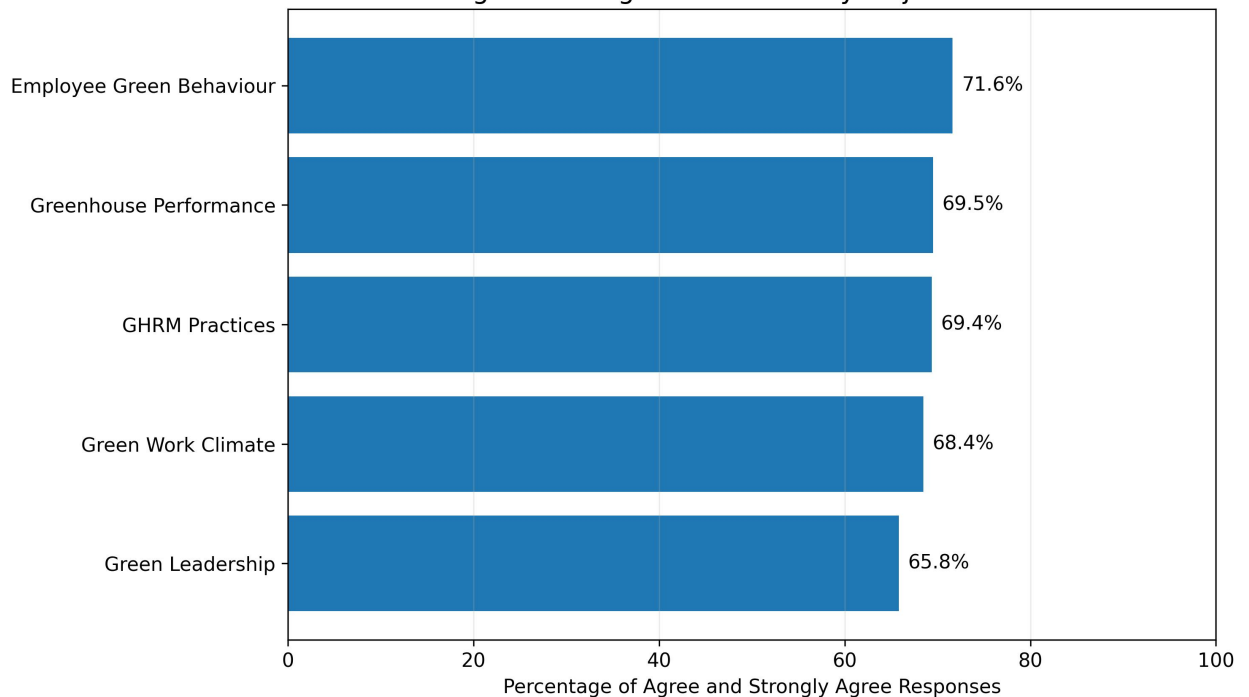
ground, such as water leakage, energy waste, unsafe disposal, or environmental bad practices.

4.5 Employee Green Behaviour

The highest mean score from the major variables was for employee green behaviour (3.95). This means that the respondents generally shared the opinion that they themselves participate in an environmentally responsible way in the workplace. The high score indicates that employees have knowledge and interest in environmental issues and that they are willing to contribute to sustainability in their daily activities.

Employees' green behaviour consisted of aspects such as informing oneself of the environmental actions and campaigns, engaging in environmental training, gaining environmental knowledge, using resources in a responsible manner, finishing work in an environmentally friendly way, motivating others, and reporting activities that are not environmentally friendly.

Figure 4.9: Agreement Rate by Major Variable



The outcome is consistent with that of Zhang et al. (2021) who proposed that employee green behaviour is a combination of green learning, individual practice, influencing others and organizational voice. The high mean score observed in the current study indicates that employees not only practice green practices but they

are also promoting them among others and conveying environmental issues to management.

Employee green behaviour had the highest agreement rate of 71.6%, among the major variables. This indicates that the majority of the responses were either “Agree” or “Strongly Agree.” This is crucial as without the employees putting policies into practice, sustainable results cannot be achieved with Green HRM. If employees don't use environmental policies in their daily work, all policies are useless.

4.6 Green Work Climate

The mean score of green work climate was 3.85. This shows that overall, the respondents felt that their organizations and/or co-workers encourage environmental responsibility. The construct comprised items related to organizational concern for environmental impact, support for environmental causes, protection of the environment and employees' concern for minimizing environmental harm.

The result indicated that the surveyed organizations have a moderate level of a green climate. Fostering a green work culture enables workers to recognize that environmental responsibility is their personal responsibility as well as the value of the organization. Norton et al. (2014) stated that green work climate acts as a mediator between sustainability policies and employee's green behaviour. It is known that when employees feel that their organization is committed to environmental responsibility, they are more likely to act in an environmentally responsible manner.

The agreement rate of green work climate was 68.4%. This finding reveals that many people believe that their organisation and colleagues are concerned about the environment. The score is only a little below that of employee green behaviour, however. This means that employees personally demonstrate green acts, but it is still necessary to further promote environmental culture of groups and organizations.

4.7 Green Transformational Leadership

The score of the variable green transformational leadership was the lowest one of the five major variables (mean score: 3.79) but still indicates a positive perception. This variable consisted of whether leadership inspires employees with environmental plans, gives a clear environmental vision, encourages employees to work towards environmental goals, takes employees' environmental beliefs into account and stimulates green ideas.

The findings suggest that employees in general have a positive attitude towards leadership's support of their environmental objectives but there is room for further improvement. Leaders are crucial in setting a positive tone for employees through their attitudes and behaviors, providing a vision for sustainability, and encouraging employees to work on sustainability issues. The green transformational leadership can foster green creativity and facilitate green product development performance, as stated by Chen and Chang (2013). Likewise Singh et al. (2020) concluded that green leadership enhances green ability, green motivation and green opportunity.

The agreement rate with regard to green leadership was 65.8%. It is a positive factor but lower than the other different variables. It indicates that there is a need for organizations to improve leadership communication, and, that there is a need to engage employees more actively in green decision making and promote green values by managers.

4.8 Greenhouse Performance and Green Innovation

The mean for the Greenhouse score was 3.91. This means that there was an agreement among respondents that environmental activities lead to better product quality, process quality, pollution reduction and reduction of hazardous substances or wastes. Even though the performance construct was not as large as other variables, the score was positive and environmental practices were positively related to organizational outcomes.

Performance in the greenhouses was 69.5% agreement. This indicates the respondents' overall satisfaction with the positive impact of environmental activities on the organization processes and results. This discovery corroborates

the findings from Aftab et al. (2023) which showed that Green HRM has a positive impact on environmental performance through green innovation and green strategy. It also validates Singh et al. (2020) who proposed that Green HRM and green transformational leadership are positively associated with green innovation and environmental performance.

Performance improvement in the greenhouse can manifest in several different ways: optimizing the use of resources, minimizing waste, improved product or crop quality, safer processes, and environmental compliance. Thus it is concluded that Green HRM is useful not only for protection of environment but also for operational performance and the result indicates this.

The mean scores of major study variables are shown here. Here are the mean scores of major study variables.

4.9 Overall Likert Response Distribution

The overall distribution of responses was in the 'Agree' and 'Strongly Agree' bands. This suggests that there was a positive attitude of the respondents toward the practices of Green HRM and environmental management of their respective organizations.

The overall pattern of the agreement reinforces the conclusion that green practices are found in the organizations surveyed. But, neutral and disagreement responses also indicate that not all the employees are equally implementing green HRM. Some organisations may have better training and recruitment and weaker reward, leadership, and/or performance appraisal.

4.10 Comparative Ranking of Constructs

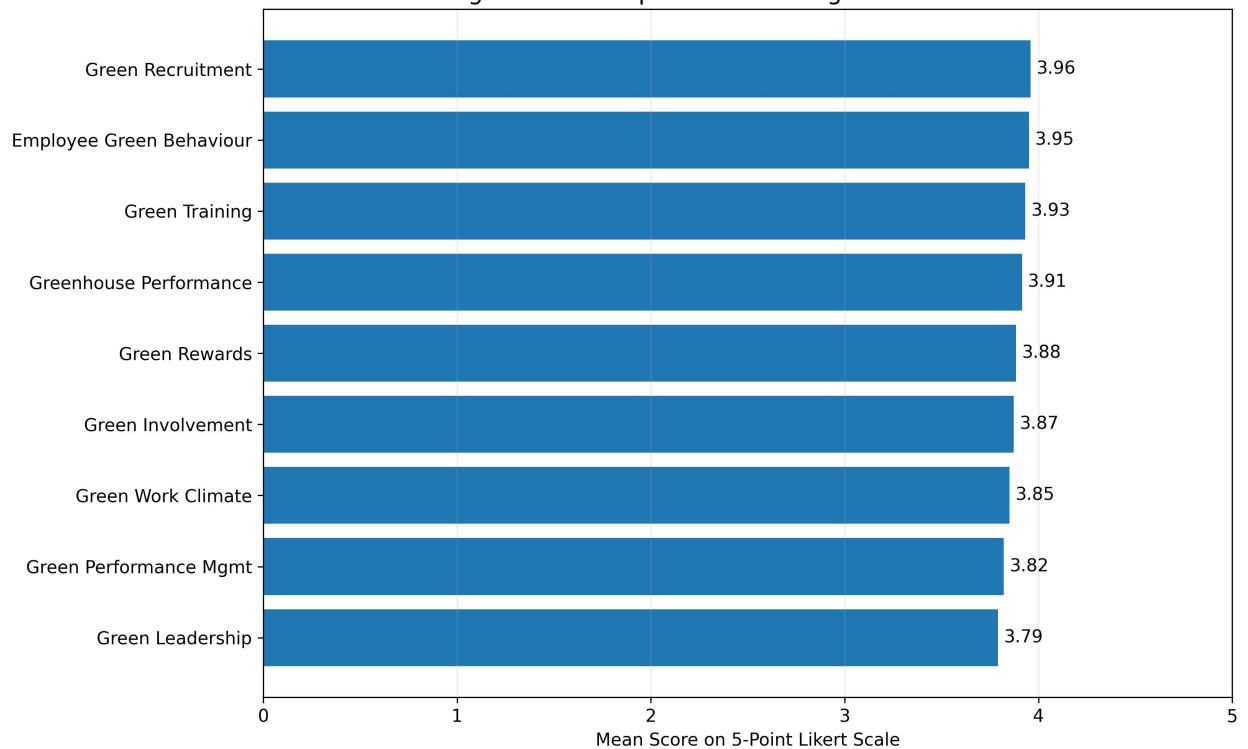
The employee green behaviour construct had the highest mean score of 3.95 as compared to the other constructs. This was followed by greenhouse performance with 3.91, GHRM practices with 3.89, green work climate with 3.85 and green leadership with 3.79.

This ranking reveals that employees are personally involved in green behaviour, and that positive performance outcomes are also being realised in organisations. Leadership, however, scored the lowest rating which suggests that managers and

leaders need to be more involved in communicating environmental vision and promote green ideas.

The results are consistent with the Resource Based View of Barney (1991) that suggests that an employee is a valuable resource for the organisation when he/she has knowledge, skills and responsible behaviour. The results of this study suggest that green behaviour among employees is a strong internal resource that supports sustainable performance.

Figure 4.7: Comparative Ranking of All Constructs



4.11 Department and Organization-Based Results

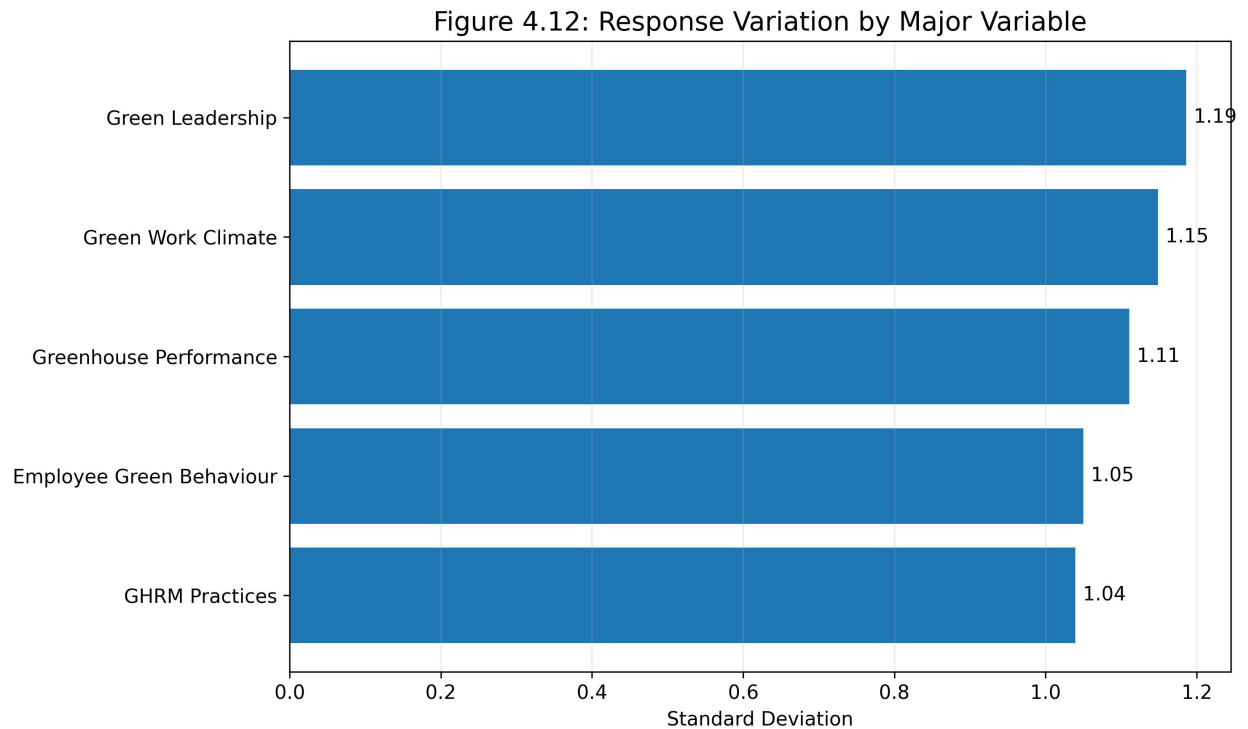
The department and organization graphs are used to display the breakdown of respondents by their position and by their organization. These graphs are used to show the variety of a sample. Responses were obtained from a variety of organisational backgrounds and roles, and so the results are not of any one department, but of environmental HRM practices at a broader level.

The department and position are important as different employees may have different perceptions of Green HRM depending on their position. The operational people might be more interested in the use of resources and reduction of waste, for instance, whereas the managers might be more interested in policies, training,

appraisal, and leadership. Likewise, other organizations may be more or less environmentally mature.

4.12 Response Variation

The graph of the standard deviation illustrates the difference between responses for the principal variables. Response variation is significant because it provides an indication of how similar or diverse the opinions of the respondents were.



If the variation is low, the respondents' opinions were more consistent; the higher the variation, the more diverse the opinions of the respondents. The overall mean scores of this study are positive though there is some variation. This is only to be expected as respondents happened to be from different backgrounds, positions, and experience levels.

Variation indicates that Green HRM is not the same in all areas. There may be some good environmental training and support for some employees, and some may feel that their green rewards and/or leadership communication are weak. Hence, it is essential for organisations to ensure uniformity of Green HRM practices in different departments.

4.13 Discussion of Findings

The results of this study reveal that the respondents have positive perceptions of Green HRM practices. The mean score for these is 3.89 suggesting that the aspects of green recruitment, green training, performance management, rewards and involvement are being applied at a moderate to high level. This backs up the claim of Tang et al., (2018), that Green HRM practices assist in developing environmentally conscious employees for the organization.

The internal control variable in the study was employee green behaviour. This indicates that staff are interested in learning, cooperating, and taking responsible action in regard to environmental objectives. According to Zhang et al. (2021), employee green behaviour can be broken down into four components: learning, individual behaviour, influencing others and organizational voice. These findings are in tune with this, as items related to personal behaviour and encouraging colleagues were both agreed upon by the respondent.

The score for green work climate was positive as well. This means that the employees feel that their organizations and co-workers care about the environment. Norton et al. (2014) maintained that work climate is a vital element in implementing sustainability policies into employee behaviour. The results of this study corroborate that claim.

The lowest mean score for the major variables was for green transformational leadership. The score remained positive, but indicates that leadership needs to be enhanced. Leaders should make the environmental aims more explicit, promote environmental ideas and involve staff in decision making. On this, the authors Chen and Chang (2013) highlighted that green transformational leadership contributes to creativity and environment performance.

The mean scores for greenhouse performance were high at 3.91, indicating that environmental practices are helping to improve processes, waste reduction, and quality. It corroborates the results of Aftab et al. (2023) and Singh et al. (2020) that Green HRM and green innovation have a relationship with environmental performance.

The results confirm that Green HRM has the potential to positively influence employee behavior, work atmosphere, leadership, and innovation in the organization which in turn will positively affect the sustainable organizational performance. The findings also indicate that staff play a crucial role in achieving environmental success. Sustainability is not driven by technology and policies without the engagement and motivation of employees.

The demographic findings indicated that the majority of the respondents were male, young, and with low levels of education and early in their career. Positive mean scores for all major variable in descriptive analysis were obtained. The scores for the employee green behaviour were the highest, followed by the greenhouse performance, GHRM practices, green work climate and green transformational leadership.

The results show that the implementation of Green HRM practices is taking place and that it is linked with positive employee and organizational outcomes. The results support previous studies by Tang et al. (2018), Singh et al. (2020), Norton et al. (2014), Chen and Chang (2013), Zhang et al. (2021), and Aftab et al. (2023). This study finally concludes that the Green HRM has a potential to influence GHG performance, innovation, environmental culture, and green behaviour of the employees.

5. Conclusion and Recommendations

The results of the study indicate that Greenhouse Human Resource Management practices positively influence the willingness of employees to be responsible for the environment. The overall mean score of the green HRM practices is 3.89 reflecting that overall respondents agreed that the green recruitment, green training, green performance management, green rewards and green employee involvement practices are applied in their organization. The highest mean score among the Green HRM dimensions was for green recruitment with a score of 3.96. This is evidence of organizations' recognition of the need to recruit environmentally conscious workers who are interested in working in an environmentally responsible workplace. A high mean score of 3.93 was also

obtained for green training, which shows that organizations are implementing training courses that will increase work behaviour and environmental awareness. The highest mean score for the employee green behaviour came from all major variables, namely with a mean score of 3.95. This indicates that staff are engaged in eco-friendly practices, including acquiring knowledge about environmental protection, conserving resources, performing their tasks in an eco-friendly way, encouraging others and reporting environmentally harmful actions. The findings are aligned with the previous study which stated that practicing Green HRM can affect the behavior of the employees in their daily work.

The mean score for greenhouse performance was also a strong one of 3.91. This suggests that environmental activities are helping to enhance the quality of the product, process quality, pollution reduction and waste management. The results indicated that the use of Green HRM is not only helpful for protecting the environment but also helpful for the organizational performance.

Employees' perceptions of their workplace as supportive of environmental responsibility were indicated by the mean score of 3.85 for green work climate. A positive green climate enables employees to grasp the fact that sustainability is a shared value in the organization, and not just an individual responsibility. The mean score of the major variables for green transformational leadership was the least (3.79). This is a positive score, but suggests there is further room to improve leadership practices with regard to environmental vision, motivation and encouragement. Environmental goals should be communicated more clearly and employees should be encouraged to bring their own ideas for improving the environment.

The study shows Greenhouse Human Resource Management is an important function in the development of environmentally responsible employees and in enhancing the performance of sustainable greenhouse. Results indicate that implementation of the green recruitment, training, performance appraisal, reward and involvement practices leads to employees' awareness of environmental responsibilities and to their inclination to engage in green behaviour at work. The results also indicate that in the context of this study, employee green behaviour is

the most effective result of the Green HRM practices. The staff expressed positive attitudes towards environmental learning, conserving resources, completing tasks in an eco-friendly way, and communicating about the environment. This could prove that employees can be a key factor in sustainability, if they are equipped with the knowledge, motivation and opportunities.

Further, the study findings indicate that: Green HRM helps to improve work processes, waste reduction, quality and environmental activities which have a positive effect on the greenhouse performance. In greenhouse workplaces, performance is closely tied-up with worker behaviors. By training employees to conserve the water, minimize waste, manage materials properly, and report environmental issues, they can reap environmental and operational benefits. The results also indicate that green work climate is also important and supportive. Employees can be more responsible if they feel their organization and co-workers care about the environment. Thus, sustainability should be a cultural issue, no longer a policy.

The study, however, also suggests the need for more attention to be given to green transformational leadership. The leadership score was positive, but not as high as other scores. This translates to greater involvement of managers and supervisors in inspiring employees, conveying environmental vision and promoting green innovation. The overall results of the research support the effectiveness of Greenhouse HRM in linking HRM with environment sustainability. It indicates that employees not only are workers but also significant players in green innovation and sustainable greenhouse performance.

5.1 Recommendations

The results indicate the following recommendations:

The first step is to enhance green recruitment and selection. Employers should take into account how aware candidates are of the environment, their desire to keep learning about sustainable practice and their ability to adhere to environmental regulations during the hiring process. This will aid organisations in developing a workforce to aid sustainability from the outset.

Second, Green training programs should be regularized and practical. Staff should be trained in water conservation, energy saving, waste reduction, safe use of chemicals, recycling and sustainable greenhouse practice. Study time should not only be theoretical; it should also involve practical examples of the workplace and demonstrations.

Third, there is a need to enhance the green performance management of organizations. Employees' responsibilities for the environment must be clearly incorporated into employee performance appraisal systems. Staff should be assessed on their adherence to environmental practices, waste minimisation, reporting of environmental issues and their participation in sustainability initiatives.

Fourth, more green rewards and recognition need to be given out. Rewards for employees who save resources, make suggestions for improved environmental practices or demonstrate responsible environmental behaviour should be rewarded in some way, such as through certificates, bonuses, public recognition or other rewards. Reward will encourage staff to maintain green practices.

Fifth, employees should be engaged. Staff should be encouraged to voice their thoughts on green ideas, engage in green problem solving, and be able to report bad practices without being afraid. Employees are directly involved in the daily activities, their inputs can contribute to the enhancement of environmental performance.

Sixth, managers need to enhance their green transformational leadership. Leaders should clearly articulate vision of the environment, inspire staff and foster collaborative working for an environmental agenda. Leaders not only need to be instructive but also need to inspire employees to assume responsibility for sustainability.

Lastly, there should be a robust green work climate in organizations. A culture of environmental responsibility needs to be part of the workplace. Co-workers and supervisors should assist each other to save resources, reduce waste and adhere to environmental standards.

5.2 Limitations of the Study

There are some limitations associated with this study. One limitation of the study was that only 51 respondents were included in the sample. Answers were useful for descriptive analysis purposes but would be more robust and generalisable with a larger sample.

Secondly, the study employed convenience sampling. Thus, the results are not necessarily reflective of all greenhouse organizations or employees.

Third, the population data used in the study were self-reported. Since the topic was related to environmental responsibility, respondents might have answered in the socially desirable manner.

Fourth, the study was of a cross-sectional design (one time data collection). Thus, the study does not offer a complete explanation of the changes in employee behavior and in greenhouse performance over time.

5.3 Future Research Directions

Future studies should be performed with more greenhouse organizations and areas with larger sample sizes. The results would be more reliable and generalizable if a larger sample size was used. Interviews or mixed method research approach could also be used in future studies to better understand the implementation of Green HRM practices in real greenhouses. Qualitative data may be used to provide explanations for the difficulties of both managers and employees.

The path between the Green HRM practices and the greenhouse performance can also be investigated by researchers by putting mediating employee green behaviour in between the variables. Likewise, further studies can investigate if green work climate or green transformational leadership further enhances the linkage between Green HRM and performance. Longitudinal studies are also recommended to monitor the changes in employee behaviour and performance over time in the context of Green HRM practices.

5.4 Final Conclusion

Finally, it can be concluded that Greenhouse Human Resource Management is an important tool for attaining environmental and organizational sustainability. The

development of the human resource with awareness, skills, motivation, and participation in environmental activities is one thing that can be obtained by implementing green HRM. The findings indicate that there are positive relationships between employee green behaviour, green work climate, green leadership, and green performance with Green HRM.

The study shows that technology or policy is not sufficient to make greenhouses sustainable. It's also reliant on folks. Hence, all employees ought to be regarded as valuable collaborators in environmental management by the greenhouse organizations. Organizations can enhance environmental sustainability and overall performance through green recruitment, training, rewards, involvement, leadership, and work climate.

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