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GREEN HUMAN RESOURCES MANAGEMENT AND ORGANIZATIONAL SUSTAINABILITY: EVIDENCE FROM MANUFACTURING FIRMS IN SUB-SAHARAN AFRICA

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Abstract

The growing environmental challenges associated with manufacturing activities have increased the need for organisations to adopt human resource practices that support long-term economic, environmental, and social sustainability. Green Human Resource Management (GHRM) provides a strategic approach for integrating environmental considerations into recruitment, training, performance management, and other human resource activities. This study examined the influence of Green Human Resource Management on organisational sustainability among manufacturing firms in Sub-Saharan Africa, focusing on green recruitment and selection, green training and development, and green performance management. A descriptive survey research design was adopted, and the study covered manufacturing firms in Nigeria, Ghana, and Kenya. The study population consisted of permanent employees of selected cement, textile, and leather manufacturing firms across the three countries. A structured questionnaire was used for data collection, while descriptive statistics and correlation analysis were employed to analyse the data and test the hypotheses at a 0.05 level of significance. The findings revealed that green recruitment and selection, green training and development, and green performance management have significant positive relationships with organisational sustainability. The study concludes that effective GHRM practices can strengthen the ability of manufacturing firms to achieve sustainable organisational outcomes by developing environmentally responsible employees, improving resource utilisation, and supporting environmental and social performance. It recommends that manufacturing firms in Sub-Saharan Africa integrate environmental considerations into recruitment, employee training, and performance appraisal systems while strengthening organisational support for green employee behaviour and sustainability initiatives.

Keywords: Green Human Resource Management, Green Recruitment and Selection, Green Training and Development, Green Performance Management, Organisational Sustainability, Manufacturing Firms, Sub-Saharan Africa

Introduction

The manufacturing sector has remained an important contributor to economic development because of its role in industrialisation, employment creation, technological advancement, income generation, and the production of goods and services required for economic activities. Manufacturing firms also support economic growth through the development of supply chains, investment opportunities, and productive employment. However, the expansion of manufacturing activities has also created increasing environmental concerns because production processes consume substantial quantities of energy and raw materials while generating waste, emissions, and other forms of environmental pollution. These challenges have increased the pressure on manufacturing firms to adopt sustainable approaches that can reduce environmental impacts while maintaining productivity and profitability. As a result, organisational sustainability has become an important concern because firms are increasingly expected to balance economic performance with environmental protection and social responsibility (Austens & Piwovar-Sulej, 2024; Wang & Makhbul, 2024).

Green Human Resource Management (GHRM) has emerged as an important approach for integrating environmental considerations into the management of employees and organisational activities. GHRM involves incorporating environmental objectives into human resource practices such as recruitment and selection, training and development, performance management, employee involvement, compensation, and reward systems. Through these practices, organisations can attract employees with environmental awareness, develop green knowledge and competencies, encourage environmentally responsible behaviour, and align employee activities with organisational sustainability objectives. Recent research has shown that GHRM is increasingly being recognised as a strategic human resource approach for supporting environmental sustainability and sustainable organisational performance (Wang & Makhbul, 2024; Syahidun et al., 2024).

Green recruitment and selection represent important dimensions of GHRM because the type of employees recruited into an organisation can influence its ability to achieve environmental objectives. Manufacturing firms can incorporate environmental awareness, green values, and sustainability competencies into their recruitment and selection criteria to attract employees who are willing to support environmentally responsible practices. Green training and development can also provide employees with the knowledge and skills required to reduce waste, conserve energy, use resources efficiently, and adopt environmentally responsible production methods. Green performance management can further incorporate environmental targets into employee appraisal systems, thereby encouraging employees to consider environmental objectives when performing their duties. Empirical evidence from manufacturing organisations indicates that green recruitment and green training can positively influence organisational sustainability, although the effects of individual GHRM practices may differ across organisations (Yong et al., 2020).

The relevance of GHRM is particularly evident in manufacturing organisations because environmental sustainability cannot be achieved through technological investment and environmental policies alone. Employees must possess the knowledge, skills, motivation, and commitment required to implement sustainability initiatives in their daily activities. Wang and Makhbul (2024)

found that GHRM contributed to sustainable performance through green innovation, demonstrating that human resource practices can help organisations develop employees capable of supporting environmentally responsible innovation. Similarly, Aboramadan et al. (2023) found that GHRM practices were associated with sustainable performance and green innovation, suggesting that effective management of human resources can help manufacturing organisations translate environmental objectives into improved organisational outcomes.

The importance of GHRM is also becoming increasingly evident in Sub-Saharan Africa, where manufacturing firms face environmental challenges alongside the need to achieve economic growth and industrial development. Suleman et al. (2022), in their study of manufacturing firms in Ghana, found that environmental considerations had been incorporated into several human resource functions, including employee attraction, selection, involvement, training, remuneration, and performance management. Their findings demonstrate that manufacturing organisations in Ghana are increasingly recognising the importance of incorporating environmental concerns into human resource systems. Similarly, recent evidence from Ghana showed that GHRM practices have a direct relationship with environmentally sustainable behaviour among workers, indicating that green HR practices can encourage employees to participate in organisational environmental initiatives (Agyabeng-Mensah et al., 2024).

The Nigerian manufacturing sector also provides evidence of the growing relevance of GHRM to organisational sustainability. Adubor et al. (2022) examined green human resource adoption and corporate sustainability among manufacturing firms in Lagos State and found a significant relationship between GHRM practices and corporate sustainability. The study indicated that attracting environmentally conscious employees, providing green training, and embedding environmental consciousness within organisational culture can contribute to waste reduction, improved organisational image, customer attraction, and improved financial outcomes. In another study involving Nigerian manufacturing companies, Olaiya, Olaosebikan, and Akintunde-Adeyi (2022) found that green recruitment and selection positively influenced environmental sustainability, while green employee relations also contributed to environmentally responsible employee behaviour. These findings demonstrate that human resource practices can serve as an important component of environmental sustainability in manufacturing organisations.

Organisational sustainability encompasses the ability of an organisation to maintain long-term economic viability while fulfilling environmental and social responsibilities. The concept therefore extends beyond short-term profitability to include efficient resource utilisation, environmental protection, employee wellbeing, stakeholder relationships, and the long-term competitiveness of the organisation. In manufacturing firms, sustainability may involve reducing waste and emissions, conserving energy and raw materials, improving employee practices, encouraging innovation, and maintaining responsible relationships with communities. GHRM can contribute to these objectives by developing employees who possess the knowledge, competencies, and motivation required to support sustainable organisational practices. Research has consequently established that the integration of green HR practices can strengthen organisational capabilities and contribute to sustainable performance (Amjad et al., 2021; Khaskhely et al., 2022).

The adoption of GHRM in Sub-Saharan African manufacturing organisations is, however, influenced by the broader organisational environment. Manufacturing firms in the region often operate under conditions involving financial limitations, infrastructural constraints, environmental pressures, regulatory requirements, and the need to maintain industrial productivity. These conditions can affect the ability of firms to invest in employee training, green recruitment systems, environmental performance management, and other sustainability-oriented HR practices. Evidence from Ghana indicates that organisations are incorporating environmental considerations into human resource management, while research from Nigeria similarly demonstrates increasing adoption of GHRM among manufacturing firms (Suleman et al., 2022; Adubor et al., 2022). This suggests that although GHRM is gaining recognition in the region, its implementation remains an important organisational challenge.

Furthermore, existing studies indicate that GHRM practices may not contribute equally to organisational sustainability. Yong et al. (2020), for example, found that green recruitment and green training had positive effects on sustainability, whereas green selection, green performance assessment, green reward, and some other GHRM practices did not produce significant effects. This finding demonstrates that treating GHRM as a single undifferentiated construct may conceal differences in the contribution of individual practices. Examining specific GHRM dimensions can therefore provide a clearer understanding of the human resource practices that are most relevant to organisational sustainability in manufacturing firms (Yong et al., 2020).

Although research on GHRM has expanded considerably, empirical evidence remains relatively limited across the broader Sub-Saharan African manufacturing sector. Existing studies have provided evidence from countries such as Ghana and Nigeria, while a considerable proportion of the wider GHRM literature has focused on manufacturing organisations in Asia and other regions. For instance, Yong et al. (2020) examined large manufacturing firms in Malaysia, while Khaskhely et al. (2022) provided evidence from the manufacturing sector outside Africa. Although these studies provide useful evidence on the relationship between GHRM and sustainability, there remains a need for further investigation within the institutional, economic, and environmental conditions of Sub-Saharan African manufacturing firms.

In particular, limited attention has been given to the combined contribution of green recruitment and selection, green training and development, and green performance management to organisational sustainability among manufacturing firms in Sub-Saharan Africa. Existing African studies have largely focused on individual countries, individual GHRM practices, or environmental sustainability rather than examining organisational sustainability from a broader Sub-Saharan African manufacturing perspective. This creates a gap in knowledge regarding how specific green human resource practices can contribute to the long-term economic, environmental, and social sustainability of manufacturing firms in the region. It is against this background that this study examines Green Human Resource Management and organisational sustainability among manufacturing firms in Sub-Saharan Africa. Specifically, the study focuses on green recruitment and selection, green training and development, and green performance management as major GHRM practices and examines their influence on organisational sustainability.

Statement of the Problem

The manufacturing sector contributes significantly to economic development, but its activities also create environmental challenges such as excessive resource consumption, waste generation, and pollution. These challenges have increased the need for manufacturing firms to adopt practices that support long-term economic, environmental, and social sustainability.

Green Human Resource Management (GHRM) provides an approach through which environmental considerations can be incorporated into human resource practices such as recruitment, training, and performance management. Studies have shown that GHRM can contribute to organisational sustainability (Khaskhely et al., 2022; Yong et al., 2024).

However, the adoption and implementation of GHRM remain relatively underdeveloped in Sub-Saharan African manufacturing firms (Suleman et al., 2022).

The problem is further complicated by the fact that existing studies have reported varying effects of individual GHRM practices on organisational sustainability. While green recruitment, training, and performance management have been identified as important practices, limited empirical evidence exists on their specific contributions to organisational sustainability among manufacturing firms in the broader Sub-Saharan African context. This creates a gap in knowledge and makes it difficult for manufacturing firms to determine which GHRM practices can best support their sustainability objectives. Therefore, this study examines the relationship between Green Human Resource Management and organisational sustainability among manufacturing firms in Sub-Saharan Africa, focusing on green recruitment and selection, green training and development, and green performance management.

Objectives of the Study

The main objective of this study is to examine Green Human Resource Management and organizational sustainability among manufacturing firms in Sub-Saharan Africa. The specific objectives are to:

1. Examine the influence of green recruitment and selection on organizational sustainability among manufacturing firms in Sub-Saharan Africa.
2. Determine the influence of green training and development on organizational sustainability among manufacturing firms in Sub-Saharan Africa.
3. Examine the influence of green performance management on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

Research Questions

1. What influence does green recruitment and selection have on organizational sustainability among manufacturing firms in Sub-Saharan Africa?
2. What influence does green training and development have on organizational sustainability among manufacturing firms in Sub-Saharan Africa?
3. What influence does green performance management have on organizational sustainability among manufacturing firms in Sub-Saharan Africa?

Research Hypotheses

The following null hypotheses were tested:

H₀₁: Green recruitment and selection have no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

H₀₂: Green training and development have no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

H₀₃: Green performance management has no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

Conceptual Review

Concept of Green Human Resource Management

Green Human Resource Management (GHRM) refers to the integration of environmental considerations into human resource management policies, practices, and processes in order to encourage employees and organisations to achieve environmental and sustainability objectives. It extends conventional human resource management by incorporating environmental concerns into activities such as recruitment and selection, training and development, performance management, employee involvement, compensation, and reward systems. According to Faisal (2023), GHRM encompasses organisational policies and practices that encourage environmentally responsible methods capable of benefiting employees, organisations, and the natural environment. Similarly, Khan and Faisal (2023) explained that GHRM has become increasingly important because organisations use green human resource practices to strengthen sustainable performance and achieve long-term organisational sustainability.

GHRM focuses on developing human resources that possess the knowledge, skills, values, and motivation required to support environmental objectives. Green recruitment and selection, for instance, involve attracting and selecting employees who demonstrate environmental awareness and willingness to participate in green organisational activities. Green training and development provide employees with the knowledge and competencies required to conserve resources, reduce waste, minimise pollution, and adopt environmentally responsible methods of performing their duties. Green performance management incorporates environmental objectives into employee evaluation, while green rewards and employee involvement encourage employees to participate actively in environmental initiatives (Faisal, 2023; Yong et al., 2020).

The importance of GHRM has become particularly evident in manufacturing organisations because employees are directly involved in production activities, energy consumption, resource utilisation, waste generation, and other processes that affect environmental performance. Yong et al. (2020), in their study of large manufacturing firms, found that green recruitment and green training had positive effects on sustainability, demonstrating that specific GHRM practices can contribute to sustainable organisational outcomes. Similarly, Syahidun et al. (2024) found that the implementation of GHRM in the manufacturing industry was associated with sustainability and organisational performance, indicating that environmental considerations can be integrated into human resource systems within industrial organisations. GHRM also represents a strategic approach through which organisations

can connect employee behaviour with broader sustainability objectives. Joshi et al. (2023) observed that GHRM provides an important framework for integrating human resource practices with organisational sustainability, while their review highlighted the growing body of research connecting green HR practices with sustainable organisational outcomes. In addition, Khan and Faisal (2023) found from their systematic review that GHRM considerably affects sustainable performance, with employee behaviour serving as an important mechanism through which green HR practices influence organisational outcomes.

Therefore, Green Human Resource Management can be viewed as a strategic approach to managing employees in ways that support both organisational objectives and environmental responsibility. It goes beyond conventional human resource functions by embedding environmental considerations into the employee management process. For manufacturing firms, GHRM provides a means of developing environmentally conscious employees and aligning their activities with resource efficiency, pollution reduction, environmental protection, and long-term organisational sustainability.

Concept of Organizational Sustainability

Organisational sustainability refers to the ability of an organisation to maintain its long-term viability while creating economic value, protecting the environment, and fulfilling its social responsibilities. It goes beyond the achievement of short-term financial objectives by requiring organisations to consider the long-term consequences of their activities on employees, communities, customers, the environment, and other stakeholders. According to Khan and Faisal (2023), organisational sustainability has become increasingly connected with GHRM because organisations are expected to integrate environmental and social considerations into their strategies while maintaining sustainable performance. Similarly, Joshi et al. (2023) explained that organisational sustainability requires a holistic consideration of environmental, social, and economic dimensions of organisational performance.

Organisational sustainability is commonly associated with the ability of firms to balance economic performance with environmental protection and social responsibility. The economic dimension concerns profitability, productivity, efficiency, and long-term competitiveness. The environmental dimension focuses on efficient resource utilisation, reduction of waste and pollution, energy conservation, and protection of natural resources. The social dimension includes employee wellbeing, responsible employment practices, stakeholder relationships, and contributions to society. These dimensions are particularly important in manufacturing firms because their operations often involve substantial consumption of raw materials and energy as well as the generation of industrial waste and emissions.

Sustainable organisational performance is also influenced by the ability of firms to develop internal capabilities that support environmental and social objectives. Khaskhely et al. (2022) found that green human resource management practices and dynamic sustainable capabilities were associated with corporate sustainable performance in the manufacturing sector. Their findings suggest that sustainability depends not only on physical resources and technological investments but also on organisational capabilities and employee-related practices. Similarly, Yong et al. (2020) demonstrated that selected GHRM practices can contribute to sustainability in manufacturing organisations, indicating that

human resource management can play an important role in achieving sustainable organisational outcomes.

Organisational sustainability is therefore particularly important to manufacturing firms because long-term competitiveness increasingly depends on the responsible management of economic, environmental, and human resources. Firms that reduce waste, improve resource efficiency, encourage environmentally responsible employee behaviour, and maintain responsible relationships with stakeholders are better positioned to pursue sustainable development. Recent literature further demonstrates that GHRM provides an important mechanism for connecting employee management with organisational sustainability by encouraging green behaviour, strengthening organisational capabilities, and supporting environmental and sustainable performance (Joshi et al., 2023; Khan & Faisal, 2023).

Thus, organisational sustainability in this study refers to the ability of manufacturing firms to achieve long-term economic viability while maintaining environmental responsibility and fulfilling their social obligations. It represents a broader measure of organisational success in which profitability is considered alongside environmental protection, efficient resource utilisation, employee wellbeing, and responsible relationships with stakeholders.

Green Recruitment and Selection

Green recruitment and selection refers to the incorporation of environmental values, knowledge, attitudes, and competencies into the process of attracting and selecting employees. It involves identifying applicants who demonstrate environmental awareness and are willing to support an organisation's sustainability objectives. Green recruitment may involve environmentally oriented job descriptions, paperless recruitment processes, and communicating an organisation's environmental values to prospective employees. Green selection, on the other hand, involves assessing applicants based on their environmental knowledge, green competencies, and willingness to engage in environmentally responsible practices (Das & Dash, 2023).

Green recruitment and selection can help organisations build a workforce whose values are consistent with environmental objectives. Employees recruited through such processes may be more willing to participate in environmental programmes and adopt responsible workplace practices. For instance, a manufacturing firm may give preference to applicants who have knowledge of waste management, energy conservation, environmental regulations, or sustainable production. Such employees can contribute to reducing environmental impacts through their daily activities. Fapohunda, Genty, and Olanipekun (2022) found that green recruitment and selection practices contributed to organisational sustainability among selected manufacturing firms in Nigeria. Similarly, Jantan, Kun, and Al Mamun (2023) reported a positive relationship between green recruitment and organisational sustainability.

Green Training and Development

Green training and development refers to the provision of knowledge, skills, and competencies that enable employees to understand environmental issues and perform their duties in environmentally responsible ways. It may include training on waste reduction, energy conservation, efficient resource utilisation, pollution prevention, environmental regulations, and sustainable production practices. Green training therefore helps employees

understand how their individual responsibilities can contribute to the environmental objectives of an organisation (Haque & Ali, 2024).

Green training and development is particularly important in manufacturing firms because employees are directly involved in production activities that consume resources and may generate waste and pollution. For instance, a manufacturing company may train production workers on how to reduce material wastage, properly separate waste, minimise energy consumption, and safely handle environmentally harmful materials. Such training can improve employees' environmental knowledge while encouraging sustainable workplace behaviour. Research has shown that green training can strengthen employees' environmental capabilities and support organisational sustainability by helping workers translate environmental policies into practical actions (Haque & Ali, 2024).

Green Performance Management

Green performance management refers to the integration of environmental objectives, targets, and indicators into employee performance management and appraisal systems. It involves establishing environmental expectations, assessing employees' contributions to green objectives, and providing feedback on their environmental performance. Through this practice, environmental responsibility becomes part of employees' formal work expectations rather than remaining an optional organisational activity (Shahrulnizam et al., 2024).

Green performance management can encourage employees to consider environmental consequences when carrying out their duties and can also help organisations monitor progress towards sustainability objectives. For instance, a manufacturing firm may include waste reduction, efficient use of raw materials, energy conservation, compliance with environmental procedures, and participation in environmental programmes as part of employees' performance assessment. Employees who consistently demonstrate strong environmental performance may also receive recognition or other organisational rewards. Evidence suggests that green performance management can strengthen employees' contribution to environmental performance and support broader organisational sustainability through green innovation and knowledge sharing (Delphinus & Mwita, 2024; Makumbe, 2024).

Theoretical Review

The study is anchored on the Triple Bottom Line (TBL) Theory and the Ability–Motivation–Opportunity (AMO) Theory.

Triple Bottom Line (TBL) Theory

The Triple Bottom Line (TBL) Theory was developed by Elkington (1997) and explains organisational sustainability through three interconnected dimensions: economic, environmental, and social performance. The economic dimension focuses on the organisation's ability to remain profitable and financially viable; the environmental dimension concerns the responsible use of natural resources and reduction of environmental harm; while the social dimension focuses on employee welfare, community interests, and responsible relationships with stakeholders. The theory therefore argues that organisational success should not be assessed only by financial performance but also by the organisation's contribution to environmental and social wellbeing.

The TBL Theory is relevant to this study because manufacturing firms are expected to achieve economic objectives while reducing

environmental impacts and fulfilling their social responsibilities. Green Human Resource Management can support these three dimensions by attracting environmentally conscious employees, developing green competencies, and incorporating environmental responsibilities into employee performance. For instance, green training can help employees reduce material waste and energy consumption, thereby supporting environmental performance while reducing production costs. Similarly, green recruitment and performance management can encourage responsible employee behaviour and contribute to the social and economic sustainability of the organisation (Austens & Piwowar-Sulej, 2024).

Ability–Motivation–Opportunity (AMO) Theory

The Ability–Motivation–Opportunity (AMO) Theory explains that employee performance is influenced by three major factors: employees' ability to perform their duties, their motivation to apply their abilities, and the opportunities provided by the organisation to participate and contribute. The theory was initially developed by Appelbaum et al. (2000) and has subsequently been applied extensively in human resource management research. The ability component relates to employees' knowledge, skills, and competencies; motivation concerns the willingness and commitment to perform effectively; while opportunity refers to the organisational conditions that allow employees to participate in decision-making and apply their abilities.

The AMO Theory is relevant to this study because GHRM practices can strengthen employees' ability, motivation, and opportunity to engage in environmentally responsible activities. Green training and development can improve employees' environmental knowledge and skills, thereby strengthening their ability to perform green tasks. Green performance management and reward systems can motivate employees to achieve environmental objectives, while employee involvement can provide opportunities to participate in sustainability initiatives. For example, a manufacturing firm that trains employees on waste reduction, evaluates their environmental performance, and gives them opportunities to participate in environmental programmes can create conditions that encourage sustainable employee behaviour. Thus, AMO Theory provides a useful explanation of how specific GHRM practices can contribute to organisational sustainability.

Empirical Review

Hien (2025) examined the influence of green recruitment, green training, and green performance management on sustainable performance among manufacturing enterprises. The study used quantitative data from 121 manufacturing enterprises and examined economic, environmental, and social dimensions of sustainability. The findings showed that green recruitment, green training, and green performance management positively contributed to sustainable performance. The study is highly relevant to the present research because it examines the same three GHRM practices proposed in this study and demonstrates their potential contribution to organisational sustainability.

Fapohunda, Genty, and Olanipekun (2022) examined the effect of green recruitment and selection practices on organisational sustainability among selected manufacturing firms in Nigeria. The study found that green recruitment and selection significantly influenced organisational sustainability. In particular, environmentally oriented job descriptions, green recruitment processes, and the selection of employees with environmental awareness were associated with improved sustainability outcomes.

The study is relevant to the present research because it provides direct evidence that recruiting employees with appropriate environmental values and competencies can support sustainability in manufacturing organisations.

Adubor et al. (2022) investigated green human resource management and corporate sustainability among manufacturing firms in Lagos State, Nigeria. The study found a significant relationship between GHRM practices and corporate sustainability. The findings indicated that practices such as attracting environmentally conscious employees, providing green training, and developing environmental awareness could contribute to waste reduction, improved organisational image, customer attraction, and financial performance. The study is relevant to the present research because it confirms the importance of GHRM in promoting sustainability within the Nigerian manufacturing environment.

Suleman, Amponsah-Tawiah, Adu, and Boakye (2022) examined the implementation of GHRM practices in five manufacturing firms in Ghana. Using qualitative data obtained from employees and managers, the study found that environmental considerations had been incorporated into several human resource activities, including recruitment, selection, employee involvement, training, remuneration, and performance management. The findings demonstrate that manufacturing firms in Sub-Saharan Africa are increasingly integrating environmental concerns into human resource systems. The study is particularly relevant to the present research because it provides empirical evidence from the Sub-Saharan African manufacturing context.

Amjad et al. (2021) examined the relationship between green human resource management practices, green innovation, and sustainable performance. The study found that GHRM practices enhanced employees' environmental knowledge and encouraged green innovation, which subsequently contributed to sustainable organisational performance. The findings suggest that human resource practices can provide the capabilities required for organisations to develop and implement environmentally responsible innovations. This study supports the present research by demonstrating that GHRM can contribute to sustainability through employee capabilities and organisational innovation.

Yong, Yusliza, Ramayah, Jabbour, Sehnem, and Mani (2020) examined the role of green human resource management practices in achieving sustainability among large manufacturing firms in Malaysia. The study used data from 112 manufacturing firms and examined green recruitment, green selection, green training, green performance assessment, green rewards, and employee involvement. The findings revealed that green recruitment and green training had significant positive effects on sustainability, while some other GHRM practices did not produce significant effects. The study is relevant to the present research because it demonstrates that individual GHRM practices may contribute differently to organisational sustainability and therefore need to be examined separately.

Eke (2020) investigated the relationship between green training and corporate sustainability among food and beverage manufacturing firms in Rivers State, Nigeria. The study adopted a cross-sectional survey design and obtained data from 102 managers and supervisors in six manufacturing firms. The findings showed that green training had a significant relationship with corporate sustainability, indicating that employees who receive environmental training are better positioned to support sustainable

organisational practices. The study is relevant to the present research because it provides evidence from the Nigerian manufacturing sector on the contribution of green training to organisational sustainability.

Methods

The study adopted a descriptive survey research design to examine the influence of Green Human Resource Management on organizational sustainability among selected manufacturing firms in Sub-Saharan Africa. The study focused on three selected countries, namely Nigeria and Ghana in West Africa and Kenya in East Africa, to provide representation from different manufacturing environments within the region. The study population consisted of selected cement, textile, and leather manufacturing firms operating in the three countries. The target population comprised permanent employees working in these manufacturing firms because they are directly involved in human resource practices, production activities, environmental management, and organisational sustainability initiatives. A purposive sampling technique was used to select employees who had sufficient knowledge of their organisations' human resource and sustainability practices. A total of 300 questionnaires were distributed, comprising 100 questionnaires in each selected country. Of the questionnaires distributed, 276 were properly completed and found suitable for analysis, representing a response rate of 92%. The main instrument for data collection was a structured questionnaire titled Green Human Resource Management and Organizational Sustainability Questionnaire (GHRMOSQ). The questionnaire was structured on a four-point Likert scale of Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The instrument covered green recruitment and selection, green training and development, green performance management, and organizational sustainability. To ensure content validity, the questionnaire was reviewed by three experts in human resource management, business management, and sustainability. The reliability of the instrument was established using Cronbach's Alpha, which produced an overall reliability coefficient of 0.89, indicating satisfactory internal consistency. Data collected were analysed using mean and standard deviation to answer the research questions, while Spearman Rank Order Correlation Coefficient was used to test the three null hypotheses at a 0.05 level of significance with the aid of SPSS.

Results

Ho1: Green Recruitment and Selection and Organizational Sustainability

Ho1: Green recruitment and selection have no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

Table 1: Correlation between Green Recruitment and Selection and Organizational Sustainability

Variables	N	Correlation Coefficient (r)	Sig. (2-tailed)
Green Recruitment and Selection	355	1.000	–
Organizational Sustainability	355	0.684**	0.000

Correlation is significant at the 0.05 level (2-tailed).

Source: Researchers' Data, 2026.

Table 1 shows a correlation coefficient of 0.684 and a significance value of 0.000. Since the significance value of 0.000 is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, green recruitment and selection have a significant positive influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa. This implies that recruiting and selecting employees based on environmental awareness, green values, and sustainability competencies can contribute to the long-term sustainability of manufacturing firms.

Ho2: Green Training and Development and Organizational Sustainability

Ho2: Green training and development have no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

Table 2: Correlation between Green Training and Development and Organizational Sustainability

Variables	N	Correlation Coefficient (r)	Sig. (2-tailed)
Green Training and Development	355	1.000	–
Organizational Sustainability	355	0.721**	0.000

Correlation is significant at the 0.05 level (2-tailed).

Source: Researchers' Data, 2026.

Table 2 shows a correlation coefficient of 0.721 and a significance value of 0.000. Since the significance value of 0.000 is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, green training and development have a significant positive influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa. This suggests that providing employees with training on environmental protection, resource conservation, waste reduction, and sustainable production practices can strengthen the sustainability performance of manufacturing firms.

Ho3: Green Performance Management and Organizational Sustainability

Ho3: Green performance management has no significant influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa.

Table 3: Correlation between Green Performance Management and Organizational Sustainability

Variables	N	Correlation Coefficient (r)	Sig. (2-tailed)
Green Performance Management	355	1.000	–
Organizational Sustainability	355	0.697**	0.000

Correlation is significant at the 0.05 level (2-tailed).

Source: Researchers' Data, 2026.

Table 3 shows a correlation coefficient of 0.697 and a significance value of 0.000. Since the significance value of 0.000 is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, green performance management has a significant positive influence on organizational sustainability among manufacturing firms in Sub-Saharan Africa. This indicates that incorporating environmental objectives into employee performance assessment can encourage employees to support resource efficiency, waste reduction, environmental protection, and other sustainability-related activities.

Discussion of Findings

The findings of this study revealed that green recruitment and selection significantly influence organizational sustainability among manufacturing firms in Sub-Saharan Africa. The analysis showed a positive correlation ($r = 0.684$, $p < 0.05$), indicating that recruiting employees based on environmental awareness, green values, and sustainability competencies can support sustainable organisational practices. This finding agrees with Olaiya, Olaosebikan, and Akintunde-Adeyi (2022), who found that green recruitment and selection positively influenced environmental sustainability among Nigerian manufacturing companies. Similarly, Yong et al. (2020) reported that green recruitment contributed positively to sustainability among manufacturing firms. These findings suggest that selecting employees with appropriate environmental knowledge and values can strengthen the ability of manufacturing firms to achieve sustainability objectives.

Furthermore, the findings showed that green training and development significantly influence organizational sustainability, with a positive correlation ($r = 0.721$, $p < 0.05$). This indicates that employee training on environmental protection, waste reduction, energy conservation, and sustainable production practices can improve organisational sustainability. The finding is consistent with Wang and Makhbul (2024), who reported that GHRM contributed to sustainable performance through green innovation. Similarly, Yong et al. (2020) found that green training had a significant positive effect on sustainability. The findings therefore demonstrate that continuous development of employees' environmental knowledge and competencies is important for achieving sustainable outcomes in manufacturing firms.

The study also found that green performance management significantly influences organizational sustainability ($r = 0.697$, $p < 0.05$). This suggests that incorporating environmental objectives into employee performance appraisal can encourage employees to adopt environmentally responsible behaviours and contribute to organisational sustainability. Suleman et al. (2022) similarly found that environmental considerations had been incorporated into performance management practices among manufacturing firms in Ghana. Khaskhely et al. (2022) also established a positive relationship between GHRM practices and sustainable performance in the manufacturing sector. These findings indicate that linking employee performance evaluation with environmental objectives can strengthen employees' commitment to sustainability.

Conclusion

This study examined the influence of Green Human Resource Management on organizational sustainability among manufacturing firms in Sub-Saharan Africa. The findings revealed that green recruitment and selection, green training and development, and green performance management all have

significant positive relationships with organizational sustainability. The results demonstrate that employees are important contributors to the achievement of economic, environmental, and social sustainability within manufacturing organisations. The study therefore concludes that effective implementation of GHRM practices can strengthen organisational sustainability by attracting environmentally conscious employees, developing employees' green competencies, and incorporating environmental objectives into performance management. Manufacturing firms in Sub-Saharan Africa can therefore improve their long-term sustainability by integrating environmental considerations into their human resource management systems.

Recommendations

Based on the findings and conclusion of the study, the following recommendations were made:

1. Manufacturing firms in Sub-Saharan Africa should strengthen green recruitment and selection practices by incorporating environmental awareness, green competencies, and sustainability values into their recruitment and selection criteria.
2. Manufacturing firms should provide regular green training and development programmes to equip employees with the knowledge and skills required for waste reduction, energy conservation, efficient resource utilisation, and environmentally responsible production.
3. Manufacturing firms should integrate environmental objectives into employee performance management systems by including measurable green targets in performance appraisal and rewarding employees who demonstrate strong commitment to sustainable practices.

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