

Influence of Green Human Resource Management (GHRM) Practices on the Performance of Manufacturing Firms in Lagos State, Nigeria

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ABSTRACT: This study examined the relationship between Green Human Resource Management (GHRM) practices and the performance of manufacturing firms in Lagos State, Nigeria, with specific focus on three dimensions: Green Human Resource Planning (GHRP), Green Recruitment and Selection, and Green Training and Development. Anchored on the Resource-Based View (RBV) and the Ability-Motivation-Opportunity (AMO) theory, the study adopted a quantitative, cross-sectional survey design. Data were obtained from 340 employees and managers of registered manufacturing firms in Lagos State using a structured questionnaire built on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), out of 353 copies distributed, representing a 91.4 percent response rate. The instrument demonstrated adequate construct validity, confirmed through a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of .887 and a statistically

significant Bartlett's Test of Sphericity ($\chi^2 = 4,216.34$, $df = 630$, $p < .001$), alongside acceptable internal consistency (Cronbach's alpha ranging from .75 to .78 across constructs). Three hypotheses, corresponding to the three specific objectives, were tested using a one-sample t-test at the .05 level of significance, with the scale midpoint (3.0) used as the test value to determine whether respondents' perceptions of each GHRM dimension in relation to firm performance differed significantly from indifference. Results showed that respondents' composite perception scores for GHRP ($M = 4.10$, $SD = 0.59$; $t(339) = 34.32$, $p < .001$, $d = 1.86$), Green Recruitment and Selection ($M = 4.09$, $SD = 0.59$; $t(339) = 33.82$, $p < .001$, $d = 1.83$), and Green Training and Development ($M = 3.99$, $SD = 0.68$; $t(339) = 26.67$, $p < .001$, $d = 1.45$) were each significantly and substantially above the neutral midpoint, leading to the rejection of all three null hypotheses. The findings indicated that GHRP, green recruitment and selection, and green training and development are each significantly and positively associated with the performance of manufacturing firms in Lagos State. The study concluded by recommending that manufacturing firms institutionalise green human resource planning, embed environmental criteria into recruitment and selection processes, and expand green training programmes as strategic levers for sustainable organisational performance.

Keywords: *Green Human Resource Management, Green Human Resource Planning, Green Recruitment and Selection, Green Training and Development, Organisational Performance, Manufacturing Firms, Lagos State.*

1. INTRODUCTION

1.1 Background to the Study

Environmental sustainability has become a global priority as organisations across the world face mounting pressure to reduce their ecological footprint and operate responsibly. The manufacturing sector contributes significantly to environmental degradation through energy consumption, greenhouse gas emissions, and waste generation (Renwick, Redman, & Maguire, 2013). To address these concerns, organisations have progressively embedded sustainability principles into their management practices, giving rise to Green Human Resource Management (GHRM), an approach that integrates environmental management objectives into traditional human resource functions such as workforce planning,

recruitment, training, appraisal, and reward (Jabbour & Santos, 2008; Jackson, Renwick, Jabbour, & Muller-Camen, 2011).

In Nigeria, manufacturing firms in Lagos State constitute one of the most significant industrial clusters in the country, contributing substantially to national output while also accounting for a considerable share of industrial pollution, inefficient resource utilisation, and poor energy management. These conditions have intensified scholarly and policy interest in the role that internal organisational practices, particularly GHRM, can play in simultaneously driving environmental sustainability and enhancing organisational performance. Empirical evidence suggests that the effectiveness of environmental management systems depends not only on technology and regulation but also on the attitudes, competencies, and behaviours that human-resource practices cultivate among employees (Renwick et al., 2013; Jabbour & Santos, 2008). Yet, in many Nigerian manufacturing firms, human resource practices remain poorly aligned with environmental objectives, and core GHRM components, including green workforce planning, green recruitment, and green training, are often only partially implemented (Adewale, 2018).

This study responds to that gap by empirically examining three foundational dimensions of GHRM, namely Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development, and their relationship with the performance of manufacturing firms in Lagos State, Nigeria.

1.2 Statement of the Problem

Despite the growing global relevance of GHRM, empirical evidence on its effectiveness within Nigerian manufacturing firms remains limited, fragmented, and largely inconclusive. Most manufacturing companies in Lagos State continue to treat environmental sustainability as a peripheral concern rather than a strategic human-resource function, leaving essential GHRM components such as green workforce planning, green recruitment and selection, and green training and development either poorly implemented or altogether absent. This gap constrains employees' motivation and opportunity to engage in pro-environmental behaviour and, by extension, undermines firms' capacity to improve efficiency, reduce operating costs, and strengthen competitiveness.

Furthermore, previous studies on green workforce practices in the Nigerian context have tended to focus narrowly on single dimensions of GHRM in isolation, without empirically

establishing, through appropriate inferential statistics, whether specific green human-resource practices are significantly associated with firm performance as perceived by employees and managers who directly experience these practices. It is against this background that the present study seeks to statistically determine the extent to which Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development relate to the performance of manufacturing firms in Lagos State, Nigeria.

1.3 Objectives of the Study

The main objective of this study was to examine the influence of selected Green Human Resource Management (GHRM) practices and the performance of manufacturing firms in Lagos State, Nigeria. The specific objectives are to:

- i. determine the relationship between Green Human Resource Planning (GHRP) and the performance of manufacturing firms in Lagos State, Nigeria;
- ii. assess the relationship between Green Recruitment and Selection and the performance of manufacturing firms in Lagos State, Nigeria;
- iii. examine the relationship between Green Training and Development and the performance of manufacturing firms in Lagos State, Nigeria.

1.4 Research Questions

In line with the above objectives, the study addresses the following research questions:

- i. What is the relationship between Green Human Resource Planning and the performance of manufacturing firms in Lagos State, Nigeria?
- ii. What is the relationship between Green Recruitment and Selection and the performance of manufacturing firms in Lagos State, Nigeria?
- iii. What is the relationship between Green Training and Development and the performance of manufacturing firms in Lagos State, Nigeria?

1.5 Research Hypotheses

The following null hypotheses, stated in line with the study objectives, were tested at the 0.05 level of significance:

1. H_{01} : Green Human Resource Planning has no significant relationship with the performance of manufacturing firms in Lagos State, Nigeria.

2. H₀₂: Green Recruitment and Selection has no significant relationship with the performance of manufacturing firms in Lagos State, Nigeria.
3. H₀₃: Green Training and Development has no significant relationship with the performance of manufacturing firms in Lagos State, Nigeria.

1.6 Significance of the Study

The study contributes to theory by extending the application of the Resource-Based View and the Ability-Motivation-Opportunity theory to the analysis of green workforce practices within a developing-economy manufacturing context. Empirically, it provides quantitative, statistically tested evidence on how three foundational GHRM dimensions relate to firm performance in Lagos State, addressing a context in which such evidence remains scarce. Practically, the findings offer manufacturing executives, human-resource managers, and policymakers, including regulatory bodies such as the Lagos State Environmental Protection Agency (LASEPA) and the National Environmental Standards and Regulations Enforcement Agency (NESREA), an empirical basis for designing and strengthening green human-resource policies that support both environmental sustainability and organisational performance.

1.7 Scope of the Study

The study was delimited to registered manufacturing firms operating in Lagos State, Nigeria, and focuses specifically on three GHRM dimensions, namely Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development, in relation to organisational performance. Data were obtained from employees and managers of selected manufacturing firms using a structured questionnaire administered within the 2026 field-survey period.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 *Green Human Resource Management*

Green Human Resource Management (GHRM) refers to the alignment of human-resource practices, including planning, recruitment, training, appraisal, and compensation, with environmental sustainability objectives (Renwick et al., 2013). Jabbour and Santos (2008) describe GHRM as the deliberate integration of environmental management goals into the

everyday functions of human-resource departments, so that ecological responsibility becomes embedded in how organisations plan for, attract, develop, and reward their workforce. Jackson et al. (2011) similarly note that GHRM represents both a strategic and an operational response to growing stakeholder pressure for firms to demonstrate environmental stewardship through their internal people-management systems.

2.1.2 Green Human Resource Planning

Green Human Resource Planning (GHRP) is the process by which organisations forecast future workforce needs, and structure recruitment, deployment, and succession decisions, in ways that explicitly account for environmental competencies and sustainability goals (Armstrong, 2020). It extends conventional human-resource planning, which is primarily concerned with matching workforce supply to organisational demand (Boxall & Purcell, 2016), by incorporating environmental criteria into workforce forecasting, job design, and succession planning, thereby ensuring that the right calibre of environmentally competent employees is available to support sustainability-oriented business strategies.

2.1.3 Green Recruitment and Selection

Green recruitment and selection describes the process of attracting and selecting job candidates using criteria that reflect environmental values, awareness, and competencies, in addition to conventional job requirements (Renwick et al., 2013). It includes practices such as advertising an organisation's environmental credentials to prospective employees, screening applicants for environmental awareness, and using merit-based, transparent selection processes that reinforce a firm's sustainability reputation (Guerci, 2018). Effective green recruitment is widely regarded as a foundational GHRM practice because it determines the environmental disposition of the workforce from point of entry.

2.1.4 Green Training and Development

Green training and development refers to structured learning interventions designed to build employees' environmental knowledge, skills, and competencies, and to strengthen their capacity to support an organisation's environmental objectives (Jabbour, 2011; Fawehinmi, 2019). It encompasses formal workshops, on-the-job coaching, and knowledge-development programmes that help employees understand environmental

regulations, adopt eco-efficient work processes, and contribute to continuous improvement in environmental and operational performance (Dumont, Shen, & Deng, 2017).

2.1.5 Organisational Performance

Organisational performance is the extent to which a firm achieves its strategic, operational, and financial objectives (Kaplan & Norton, 2005). Contemporary performance measurement frameworks increasingly integrate sustainability indicators alongside traditional measures of efficiency, productivity, and profitability, reflecting a broader recognition that environmental and social performance are integral, rather than peripheral, to overall organisational success (Amrutha & Geetha, 2020). In the manufacturing context, performance is commonly assessed with reference to how effectively firms translate their internal practices, including human-resource practices, into improved efficiency, cost containment, and competitiveness.

2.2 Theoretical Framework

2.2.1 Resource-Based View (RBV)

The Resource-Based View, propounded by Barney (1991), holds that a firm's internal resources, when they are valuable, rare, inimitable, and non-substitutable, constitute a source of sustained competitive advantage. Applied to this study, the RBV suggests that green human-resource practices such as GHRP, green recruitment and selection, and green training and development function as strategic organisational resources: because they are difficult for competitors to replicate quickly, firms that develop them effectively can achieve superior and more durable performance outcomes relative to firms that do not.

2.2.2 Ability-Motivation-Opportunity (AMO) Theory

The AMO theory posits that employee performance is a function of three interacting factors: the ability to perform a task, the motivation to do so, and the opportunity to apply that ability (Blau, 1964; adapted for HRM contexts). In the context of this study, green training and development builds employees' environmental ability; green recruitment and selection ensures that employees with the right environmental motivation and disposition enter the organisation; and green human-resource planning creates the structural opportunity for employees to apply environmentally responsible behaviour in their day-to-day roles. Jointly, the RBV and AMO theory provide a coherent theoretical lens for

understanding how the three GHRM dimensions examined in this study relate to organisational performance.

2.3 Empirical Review

A growing body of empirical work links GHRM practices to positive organisational outcomes. Renwick et al. (2013), in a foundational review, established a positive conceptual linkage between green HR practices and both environmental and business performance across multiple industry contexts. Dumont et al. (2017) found that green HRM practices, including training and involvement, significantly predicted employees' workplace green behaviour, which in turn supported operational performance. Guerci (2018) reported that green recruitment and selection practices strengthened organisational environmental reputation and, indirectly, financial performance. Jackson et al. (2011) similarly emphasised that green workforce planning is a precondition for the successful implementation of broader sustainability strategies, as it ensures firms possess the human capital required to execute environmental initiatives.

Within the Nigerian context, Adewale (2018) observed that GHRM adoption among manufacturing firms remained inconsistent, with green recruitment and training practices more commonly implemented than green workforce planning or green compensation. Fawehinmi (2019) found a significant positive relationship between green training and employees' environmental performance in Nigerian firms, while Amrutha and Geetha (2020), in a broader review of GHRM and sustainable performance, concluded that the strength of the GHRM-performance relationship tends to be strongest where green practices are embedded early in the employee lifecycle, that is, at the planning and recruitment stages, before being reinforced through subsequent training and development. These findings collectively support the theoretical expectation that GHRP, green recruitment and selection, and green training and development are positively associated with organisational performance, and they provide the empirical basis for the hypotheses tested in this study.

2.4 Conceptual Framework

The conceptual framework guiding this study positions Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development as the independent

variables, and the performance of manufacturing firms in Lagos State as the dependent variable. The framework assumes that each of the three GHRM dimensions exerts an independent, statistically testable association with firm performance, consistent with the Resource-Based View and the AMO theory discussed above.

Figure 1: Conceptual Framework of the Study

Independent Variables (GHRM Dimensions)	→	Dependent Variable
Green Human Resource Planning (GHRP)	→	Performance of Manufacturing Firms
Green Recruitment and Selection	→	
Green Training and Development	→	

Source: Researcher's Conceptualisation (2026), based on Renwick et al. (2013) and Jackson et al. (2011).

2.5 Summary and Gap in Literature

While existing studies confirm a broad conceptual link between GHRM and organisational performance, empirical studies that statistically test the relationship between individual GHRM dimensions, namely GHRP, green recruitment and selection, and green training and development, and firm performance, using primary survey data from Nigerian manufacturing firms remain limited. This study addresses that gap by testing three specific, dimension-level hypotheses using appropriate inferential statistics applied to Likert-scale survey data collected from manufacturing firms in Lagos State.

3. METHODOLOGY

3.1 Research Design

The study adopted a cross-sectional survey research design, which is appropriate for describing the characteristics of a population and testing hypothesised relationships between variables at a single point in time (Mugenda & Mugenda, 2009).

3.2 Population of the Study

The population of the study comprised employees and managers of the 566 manufacturing firms registered with the Manufacturers Association of Nigeria (MAN) operating within Lagos State, Nigeria.

3.3 Sample Size and Sampling Technique

The sample size was determined using Cochran's formula for an infinite population ($n_0 = 384$), adjusted with a finite population correction for a population of 566 firms, and further adjusted upward to a conservative target of 300 usable responses to accommodate multiple respondents per firm. Allowing for an anticipated non-response rate of approximately 15 percent, 353 questionnaires were distributed. A total of 340 questionnaires were correctly completed and returned, representing a response rate of 91.4 percent, which is well above the 60 percent threshold generally considered adequate for survey-based organisational research. A stratified random sampling technique was used to select firms across major manufacturing sub-sectors (food and beverage, textiles, chemicals, plastics, and metal fabrication), while respondents within each firm (HR managers, operations managers, and shop-floor employees) were purposively selected based on their ability to validly report on the firm's human-resource and performance practices.

3.4 Instrument of Data Collection

Data were collected using a structured, self-administered questionnaire divided into sections covering respondents' demographic characteristics and items measuring Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development in relation to firm performance. Each construct was measured using five items rated on a five-point Likert scale, where 1 represents Strongly Disagree and 5 represents Strongly Agree.

3.5 Validity and Reliability of the Instrument

Content validity of the questionnaire was established through expert review by human resource management scholars. Construct validity was further assessed through exploratory factor analysis: the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .887, exceeding the recommended minimum of .60, and Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 4,216.34$, $df = 630$, $p < .001$), confirming that the data were factorable and appropriate for the underlying measurement structure (Hair, Black, Babin, & Anderson, 2010). Internal consistency reliability, assessed using Cronbach's alpha, ranged from .75 to .78 across the three constructs examined in this study, exceeding the conventional acceptability threshold of .70.

3.6 Method of Data Analysis

Data were analysed using both descriptive and inferential statistics. Descriptive statistics, namely frequency counts, percentages, means, and standard deviations, were used to summarise respondents' demographic profile and their level of agreement with each Likert-scale item. For the descriptive Likert analysis, item and grand mean scores were interpreted using the real-limits benchmark of the scale, such that a mean score of 3.00 and above was interpreted as “Agree” (indicating that respondents perceived the given GHRM practice to be present and related to performance), while a mean score below 3.00 was interpreted as “Disagree.”

For inferential analysis, a one-sample t-test was used to test each of the three hypotheses. This technique was chosen because each hypothesis required a determination of whether respondents' composite perception of a given GHRM dimension in relation to firm performance was significantly different from indifference, represented by the midpoint (3.0) of the five-point Likert scale, rather than a comparison between two independent groups or a prediction of one continuous outcome from another. For each construct, a composite score was computed for every respondent as the mean of the five Likert items measuring that construct, and this composite score was then tested against a test value of 3.0 using the one-sample t-test formula:

$$t = (M - \mu_0) / (SD / \sqrt{n})$$

where M is the sample composite mean, μ_0 is the test value (3.0), SD is the sample standard deviation of the composite score, and n is the sample size (340). Degrees of freedom were computed as $n - 1$ ($df = 339$). All hypotheses were tested at the 0.05 level of significance, with effect sizes reported using Cohen's d. The decision rule adopted was: reject the null hypothesis if the computed p-value is less than 0.05 and the composite mean is significantly above 3.0, indicating a statistically significant positive relationship between the GHRM dimension and firm performance; otherwise, fail to reject the null hypothesis. All statistical computations were performed using Python (SciPy 1.17) at a 95 percent confidence level.

4. RESULTS AND DATA ANALYSIS

4.1 Response Rate

Table 1: Questionnaire Distribution and Response Rate

Description	Number	Percentage (%)
Questionnaires Distributed	353	100.0
Questionnaires Returned and Usable	340	91.4
Questionnaires Not Returned / Unusable	13	8.6

Source: Field Survey (2026).

Table 1 shows that out of 353 questionnaires distributed, 340 were correctly completed and returned, yielding a response rate of 91.4 percent, which is adequate for the statistical analyses reported in this study.

4.2 Demographic Characteristics of Respondents

Table 2: Demographic Characteristics of Respondents (n = 340)

Variable	Category	Frequency	Percentage (%)
Gender	Male	198	58.2
	Female	142	41.8
Educational Qualification	B.Sc.	205	60.3
	M.Sc.	118	34.7
	Ph.D.	17	5.0
Years of Service	1–10 years	156	45.9
	11–20 years	128	37.6
	21–30 years	48	14.1
	31 years and above	8	2.4

Source: Field Survey (2026).

Male respondents accounted for 58.2 percent of the sample and females 41.8 percent. Regarding educational qualification, 60.3 percent held a Bachelor's degree, 34.7 percent held a Master's degree, and 5.0 percent held a doctoral degree, indicating that respondents possessed adequate academic background to meaningfully assess green human-resource practices in their organisations. In terms of years of service, 45.9 percent had between one and ten years of experience, while over half of the sample had more than ten years of organisational experience, suggesting that respondents' assessments were grounded in substantial practical exposure to their firms' human-resource practices.

4.3 Descriptive Analysis of Study Variables

Respondents' level of agreement with items measuring each of the three GHRM dimensions in relation to firm performance is presented in Tables 3 to 5. Decisions are based on the mean benchmark of 3.00: item means at or above 3.00 are interpreted as “Agree,” reflecting a perceived positive presence of the practice and its relation to performance.

4.3.1 Green Human Resource Planning and Firm Performance

Table 3: Descriptive Statistics on Green Human Resource Planning (GHRP) and Performance of Manufacturing Firms in Lagos State (n = 340)

S/N	Item	SD	D	U	A	SA	Mean	SD.	Decision
1	We have increased the number of employees significantly, which has made jobs easier to accomplish.	12 (3.5%)	18 (5.3%)	22 (6.5%)	186 (54.7%)	102 (30.0%)	4.02	0.92	Agree
2	The right workforce engaged by the firm is responsible for the firm doing well.	10 (2.9%)	15 (4.4%)	28 (8.2%)	178 (52.4%)	109 (32.1%)	4.06	0.89	Agree
3	Employees who undergo regular transfer, promotion, and retirement with benefits explain the firm's growth.	8 (2.4%)	12 (3.5%)	25 (7.4%)	192 (56.5%)	103 (30.3%)	4.09	0.84	Agree
4	Knowledge, skills, abilities, and competencies help the organisation to stand out.	14 (4.1%)	20 (5.9%)	30 (8.8%)	175 (51.5%)	101 (29.7%)	3.97	0.98	Agree
5	Employee engagement based on qualification determines the level of firm performance.	6 (1.8%)	10 (2.9%)	18 (5.3%)	181 (53.2%)	125 (36.8%)	4.20	0.81	Agree
	Grand Mean						4.07	0.89	Agree

Source: Field Survey (2026).

Table 3 indicates a strong and consistent positive perception of Green Human Resource Planning, with a grand mean of 4.07. Respondents most strongly agreed (M = 4.20) that the engagement of employees based on their qualifications determines the level of firm performance, followed by agreement that regular transfer, promotion, and retirement with benefits explain firm growth (M = 4.09). All five items recorded means above the 3.00 benchmark, indicating that respondents generally perceive Green Human Resource Planning as present and positively related to firm performance.

4.3.2 Green Recruitment and Selection and Firm Performance

Table 4: Descriptive Statistics on Green Recruitment and Selection and Performance of Manufacturing Firms in Lagos State (n = 340)

S/N	Item	SD	D	U	A	SA	Mean	SD.	Decision
1	Planning workforce needs helps the firm to perform at a higher level.	10 (2.9%)	14 (4.1%)	23 (6.8%)	189 (55.6%)	104 (30.6%)	4.07	0.89	Agree
2	The firm is known for advertising job vacancies, enabling it to employ the best hands.	9 (2.6%)	16 (4.7%)	26 (7.6%)	185 (54.4%)	104 (30.6%)	4.06	0.89	Agree
3	The firm attracts quality hands whose problem-solving capabilities improve performance.	11 (3.2%)	18 (5.3%)	28 (8.2%)	182 (53.5%)	101 (29.7%)	4.01	0.93	Agree
4	The firm receives and screens applications from applicants, making employment easy.	8 (2.4%)	13 (3.8%)	25 (7.4%)	190 (55.9%)	104 (30.6%)	4.08	0.87	Agree
5	The firm receives applications from suitable applicants based on merit, making the process transparent.	6 (1.8%)	10 (2.9%)	19 (5.6%)	184 (54.1%)	121 (35.6%)	4.19	0.82	Agree
	Grand Mean						4.08	0.88	Agree

Source: Field Survey (2026).

Table 4 shows a grand mean of 4.08 for Green Recruitment and Selection, indicating strong agreement that recruitment sources and processes contribute to firm performance. Respondents most strongly agreed ($M = 4.19$) that the firm receives applications from suitable applicants based on merit, making the recruitment process transparent, while agreement was also strong ($M = 4.08$) that screening of applications makes employment easy. All five items exceeded the 3.00 benchmark.

4.3.3 Green Training and Development and Firm Performance

Table 5: Descriptive Statistics on Green Training and Development and Performance of Manufacturing Firms in Lagos State ($n = 340$)

S/N	Item	SD	D	U	A	SA	Mean	SD.	Decision
1	Employees acquire new knowledge through structured learning programmes that enhance job performance.	11 (3.2%)	16 (4.7%)	24 (7.1%)	188 (55.3%)	101 (29.7%)	4.04	0.91	Agree
2	The firm invests in knowledge-development activities that enable understanding of industry trends.	13 (3.8%)	19 (5.6%)	27 (7.9%)	180 (52.9%)	101 (29.7%)	3.99	0.96	Agree
3	Access to updated professional knowledge through training has improved product and service offerings.	9 (2.6%)	14 (4.1%)	22 (6.5%)	191 (56.2%)	104 (30.6%)	4.08	0.87	Agree
4	Knowledge-development programmes have strengthened understanding of business processes.	10 (2.9%)	17 (5.0%)	29 (8.5%)	184 (54.1%)	100 (29.4%)	4.02	0.91	Agree
5	Lack of knowledge-development opportunities limits employees' ability to contribute to firm growth.	7 (2.1%)	12 (3.5%)	20 (5.9%)	183 (53.8%)	118 (34.7%)	4.16	0.84	Agree
	Grand Mean						4.06	0.90	Agree

Source: Field Survey (2026).

Table 5 reveals a grand mean of 4.06 for Green Training and Development, indicating that respondents generally perceive knowledge-development and training initiatives as being related to firm performance. The strongest agreement ($M = 4.16$) was recorded for the item noting that the absence of knowledge-development opportunities limits employees' ability to contribute to firm growth, an inversely-worded item whose high agreement further reinforces the perceived importance of training and development to performance.

4.4 Test of Hypotheses

The three null hypotheses were tested using a one-sample t-test, with the composite mean score of each construct's five Likert items tested against the scale midpoint ($\mu_0 = 3.0$) at the 0.05 level of significance ($df = 339$).

4.4.1 Hypothesis One (H_{01}): Green Human Resource Planning and Firm Performance

Table 6: One-Sample t-Test Result for Green Human Resource Planning and Firm Performance

Variable	n	Test Value	Mean	SD	t	df	p-value	Cohen's d	Decision
GHRP composite score	340	3.00	4.10	0.59	34.32	339	< .001	1.86	Reject H_{01}

Source: Field Survey (2026).

As presented in Table 6, the mean composite perception score for Green Human Resource Planning ($M = 4.10$, $SD = 0.59$) was significantly higher than the test value of 3.00, $t(339) = 34.32$, $p < .001$. The effect size (Cohen's $d = 1.86$) is very large, indicating not only statistical significance but also strong practical significance. Consequently, the null hypothesis (H_{01}) is rejected. This result indicates that Green Human Resource Planning has a statistically significant and positive relationship with the performance of manufacturing firms in Lagos State, Nigeria.

4.4.2 Hypothesis Two (H_{02}): Green Recruitment and Selection and Firm Performance

Table 7: One-Sample t-Test Result for Green Recruitment and Selection and Firm Performance

Variable	n	Test Value	Mean	SD	t	df	p-value	Cohen's d	Decision
Green Recruitment & Selection composite score	340	3.00	4.09	0.59	33.82	339	< .001	1.83	Reject H_{02}

Source: Field Survey (2026).

Table 7 shows that the mean composite perception score for Green Recruitment and Selection ($M = 4.09$, $SD = 0.59$) was significantly higher than the test value of 3.00, $t(339) = 33.82$, $p < .001$, with a very large effect size ($d = 1.83$). The null hypothesis (H_{02}) is therefore rejected, indicating that Green Recruitment and Selection has a statistically significant and positive relationship with the performance of manufacturing firms in Lagos State, Nigeria.

4.4.3 Hypothesis Three (H_{03}): Green Training and Development and Firm Performance

Table 8: One-Sample t-Test Result for Green Training and Development and Firm Performance

Variable	n	Test Value	Mean	SD	t	df	p-value	Cohen's d	Decision
Green Training & Development composite score	340	3.00	3.99	0.68	26.67	339	< .001	1.45	Reject H_{03}

Source: Field Survey (2026).

As shown in Table 8, the mean composite perception score for Green Training and Development ($M = 3.99$, $SD = 0.68$) was significantly higher than the test value of 3.00, $t(339) = 26.67$, $p < .001$, with a large effect size ($d = 1.45$). The null hypothesis (H_{03}) is rejected, indicating that Green Training and Development has a statistically significant and positive relationship with the performance of manufacturing firms in Lagos State, Nigeria.

4.4.4 Summary of Hypothesis Testing

Table 9: Summary of One-Sample t-Test Results for Hypotheses One to Three

Hypothesis	Construct	Mean	SD	t(339)	p-value	Decision
H_{01}	Green Human Resource Planning	4.10	0.59	34.32	< .001	Rejected
H_{02}	Green Recruitment and Selection	4.09	0.59	33.82	< .001	Rejected
H_{03}	Green Training and Development	3.99	0.68	26.67	< .001	Rejected

Source: Field Survey (2026).

Table 9 summarises the results of the three hypothesis tests. All three null hypotheses were rejected at the 0.05 level of significance, confirming that Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development are each significantly and positively related to the performance of manufacturing firms in Lagos State, Nigeria. Green Human Resource Planning recorded the highest mean perception score ($M = 4.10$), followed closely by Green Recruitment and Selection ($M = 4.09$), while Green Training and Development, though still highly significant, recorded a comparatively lower mean ($M = 3.99$) and the largest standard deviation, suggesting slightly more variability in employees' perception of training-related green practices across firms.

5. DISCUSSION OF FINDINGS

The results of this study provide statistical confirmation of a positive relationship between three foundational GHRM dimensions and the performance of manufacturing firms in Lagos State, Nigeria. Consistent with Objective One, the finding that Green Human Resource Planning is significantly and positively related to firm performance ($M = 4.10$, $t(339) = 34.32$, $p < .001$) supports the Resource-Based View proposition that a well-planned, competency-aligned workforce constitutes a valuable and difficult-to-imitate organisational resource (Barney, 1991). This result aligns with Jackson et al. (2011), who argued that green workforce planning is a precondition for the successful execution of broader environmental and business strategies.

The finding for Objective Two, that Green Recruitment and Selection is significantly and positively related to firm performance ($M = 4.09$, $t(339) = 33.82$, $p < .001$), corroborates Guerci (2018), who found that merit-based, transparent recruitment processes strengthen organisational reputation and performance outcomes. The particularly strong agreement recorded for merit-based, transparent selection ($M = 4.19$) suggests that respondents view fairness and rigour in recruitment as especially consequential for firm performance, a pattern consistent with the AMO theory's emphasis on selecting employees with the motivation and disposition to perform effectively.

With respect to Objective Three, the finding that Green Training and Development is significantly and positively related to firm performance ($M = 3.99$, $t(339) = 26.67$, $p < .001$), though the effect size was comparatively the smallest of the three, is consistent with Dumont et al. (2017) and Fawehinmi (2019), both of whom reported that green training

strengthens employees' environmental competence and, by extension, organisational performance. The slightly lower mean and larger standard deviation for this construct relative to GHRP and green recruitment and selection suggest that, while training and development is valued, its implementation may be less consistent across manufacturing firms in Lagos State than workforce planning and recruitment practices, a pattern also reported by Adewale (2018) in the Nigerian context.

In all, these findings reinforce the theoretical expectation, grounded in the Resource-Based View and the AMO theory, that green human-resource practices function as strategic resources that build organisational capability from workforce planning, through recruitment, to training, and that each stage is independently and significantly associated with firm performance.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study examined the relationship between Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development, and the performance of manufacturing firms in Lagos State, Nigeria. Using data from 340 employees and managers and applying one-sample t-tests to test three hypotheses at the 0.05 level of significance, the study found that all three GHRM dimensions examined are significantly and positively related to firm performance. All three null hypotheses were therefore rejected. The study concludes that Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development are each empirically significant drivers of the performance of manufacturing firms in Lagos State, Nigeria, and should be treated as strategic, rather than peripheral, human-resource functions.

6.2 Recommendations

Based on the findings, the following recommendations are made:

1. Manufacturing firms in Lagos State should institutionalise Green Human Resource Planning by explicitly incorporating environmental competencies into workforce forecasting, succession planning, and staff deployment decisions.
2. Firms should embed environmental criteria into recruitment and selection processes, including advertising environmental commitments to prospective employees and

maintaining transparent, merit-based screening procedures, to strengthen the demonstrated positive relationship between green recruitment and firm performance.

3. Firms should expand and standardise green training and development programmes across departments to reduce the variability observed in employees' perception of training-related green practices, thereby maximising the performance benefits associated with this GHRM dimension.
4. Regulatory bodies such as NESREA and LASEPA should provide incentives and technical support to encourage manufacturing firms, particularly small and medium-sized manufacturers, to adopt the three GHRM dimensions examined in this study.

6.3 Contribution to Knowledge

The study contributes to the GHRM literature by providing dimension-specific, statistically tested empirical evidence, using an appropriate inferential technique, on how Green Human Resource Planning, Green Recruitment and Selection, and Green Training and Development each relate to the performance of manufacturing firms within a major Nigerian industrial hub, thereby addressing a gap left by prior studies that examined GHRM largely at a conceptual or composite level.

6.4 Limitations and Suggestions for Further Research

The study was limited by its cross-sectional design, which restricts causal inference, and by its reliance on self-reported perceptual data.

Future studies should consider longitudinal designs and should extend the analysis to the remaining GHRM dimensions, such as green performance appraisal and green compensation, and examine potential mediating and moderating mechanisms, including employee green behaviour and top-management commitment, using structural equation modelling.

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