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Green Human Resources Management Practices and Tertiary Institution Productivity in South West Nigeria

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Abstract: Inadequate Implementation of Green human resources Practices in tertiary institutions in South West Nigeria has made the higher institution of learning to face challenges in integrating environmental conservatives policy in their operations. The study therefore examined the effect of green human resources practices on organizational productivity of tertiary institutions in Nigeria. The study adopted a cross- sectional survey research design with the aid of structured questionnaire. The population for the study are the employees of the all the six (6) Federal polytechnics in South Nigeria, totaling 5028. From this population, an aggregate sample size of 371 participants were selected using Taro Yamane sample size calculator where proportional allocation was used to select participants for inclusion per tertiary institution. Structural equation modeling using Smart-PLS 4.0 was used for data analysis; as results indicated that GIO ($A_{GIO} = 0.123$, T-statistic = 3.512, $p < 0.05$), GRCM ($A_{GRCM} = 0.448$, T-statistic = 8.385, $p < 0.05$), and GRS ($A_{GRS} = 0.235$, T-statistic = 4.711, $p < 0.05$) have significant positive effects on organizational productivity. This highlights the importance of these green HR practices in enhancing productivity in the selected tertiary institutions in Southwest Nigeria. The study concluded that green human resources management practices is crucial in achieving optimal organizational productivity of the federal polytechnics in South West Nigeria. The study therefore recommended that the management of the federal Polytechnics in South West Nigeria should use environmental conservative employer branding to attract, select applicants and retain employees who have green orientation through a well-defined and circulated environmental sustainability human resources policy.

Keywords: Green Recruitment, Selection, Green Training, Induction, Green Rewards and Organizational Productivity.

I. Introduction

Organizations all over the world are under constant pressure to become more sustainable in order to reduce their environmental impact, improve the social benefits that their businesses provide, and promote economic growth that goes beyond traditional profit-related or social welfare initiatives (Jabbour & Renwick, 2020). Business executives, public servants, consumers, and management academics are increasingly concerned about this trend and seeking novel solutions to the problems (Jabbour & Santos, 2018). As a result, organizations were required to develop plans and guidelines for launching sustainable development initiatives while adhering to environmental regulations. Green HRM, or environmentally friendly human resource practices, should be implemented to convert regular employees into green employees in order to meet the organization's sustainability goals and, ultimately, contribute significantly to environmental sustainability (Opatha & Arulrajah, 2014). To better understand the role of green HRM in sustainable issues, previous research has focused on creating a green culture within the company, involving employees in reducing office waste, motivating them to use resources wisely, and other eco-friendly initiatives (Das & Singh 2016). However, according to (Rajiani, Yahya, Yunus, Ahamat, Budiono, & Mohtar, 2015), the majority of organizations are still in the early stages of implementing green HRM practices, necessitating additional research to solidify and delve deeper into the concepts. As more academics and researchers understand the importance of developing sustainability strategies and assessing their long-term performance, they are becoming more interested in this field.

In the twenty-first century, environmental protection has received international attention. Organizations in Africa and around the world have been held accountable for their contributions to environmental degradation caused by pollution of air, water, soil, noise, and other elements (Oyeleke, Abiodun, & Bolaji. 2019). Organizations are expected to take the lead in environmental conservation as stakeholders by attracting knowledgeable individuals with a track record of eco-friendly behavior. As a result, organizations have developed the necessary plans to protect the environment while maintaining their current efficacy and efficiency. Green human resource management practices are thus one of the strategies developed by organizations to ensure environmental protection while also increasing effectiveness and efficiency (Adeniyi, 2018).

Tertiary institutions, including universities and colleges, play a significant role in shaping societal attitudes and behaviors, including those related to environmental stewardship. In Southwest Nigeria, where environmental concerns and sustainability efforts are increasingly prominent, the role of tertiary institutions in promoting GHR and sustainable practices is of particular importance (Arago & Jabbour, 2020).

The significance of integrating green human resources (HR) practices within tertiary institutions in South West Nigeria cannot be overstated, particularly in the context of advancing sustainability agendas and enhancing organizational productivity (Adeniyi,

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2018). With growing concerns about environmental degradation, resource depletion, and climate change, there is a pressing need for higher education institutions to play a proactive role in promoting sustainable development through their operational practices and educational initiatives. As key drivers of knowledge creation, innovation, and societal transformation, tertiary institutions have a unique opportunity to foster sustainability literacy, cultivate environmentally responsible behaviors, and drive positive change within their communities (Oladapo & Owolabi, 2020).

However, maintaining the environment and natural resources while keeping up with tertiary institutions is a significant challenge to the organization's efforts to achieve excellent service quality and a competitive advantage. The resources and competencies that enable environmentally friendly activity are critical to postsecondary educational institutions' current and future competitive advantage strategies (Yusoff, Omar, & Zaman, 2019). As a result, many organizations are eager to implement EMS or green initiatives to ensure that their regular operations have a lower negative impact on the environment (Jabbour and Renwick, 2020). Green HRM, also known as environmental human resources practices, is the process of hiring, training, rewarding, and developing a green workforce that understands and values environmentally friendly values, practices, and initiatives that lead to overall organizational efficiency and environmental protection. This improves HRM (Anwar, Mahmood, Yusliza, Ramayah, & Faezah, 2022).

In South West Nigeria, tertiary institutions face myriad challenges related to environmental sustainability, including energy inefficiency, waste management issues, and limited access to green technologies (Adelekan, 2017). Addressing these challenges requires a holistic approach that encompasses not only technological solutions but also human capital development and organizational culture change (Adeoti, 2019). Green HR practices offer a strategic framework for aligning human capital management with sustainability objectives, thereby facilitating the transition towards more environmentally sustainable and socially responsible institutions (Oyewobi, 2021).

Statement of the Problem

The adoption of green HRM practices, such as green recruitment, training, and reward management, offers significant potential for enhancing sustainability and productivity in South West Nigerian tertiary institutions. However, these institutions face challenges in effectively implementing these practices. Key issues include the absence of specific guidelines for assessing candidates' environmental awareness during recruitment, a lack of awareness among HR professionals about green hiring strategies, and deficiencies in green training initiatives that are critical for equipping staff and students with the necessary skills for promoting sustainability (Jabbour & Santos, 2018; Oladapo & Owolabi, 2020; Shoaibi, 2021).

Additionally, the implementation of green reward management practices, which are vital for recognizing and incentivizing environmentally responsible behavior, is hindered by a lack of formalized systems and resources. This misalignment between reward structures and sustainability goals undermines efforts to foster a culture of environmental stewardship within these institutions. Furthermore, existing induction and orientation programs often fail to emphasize sustainability-related issues, leading to limited awareness among employees regarding their role in advancing environmental stewardship.

The relationship between green HRM practices and institutional productivity in South West Nigeria remains underexplored. While it is theoretically suggested that green HRM can improve organizational performance through enhanced employee engagement and morale, there is limited empirical evidence supporting this within the context of tertiary education in the region. As a result, the impact of green HRM practices on productivity, operational efficiency, and academic excellence in these institutions is uncertain. This study aims to explore the effect of green human resources management on organizational productivity in South West Nigerian tertiary institutions.

Objectives of the study

The prime focus of this study is to examine the effect of green human resources on the organizational Productivity of the selected tertiary institutions in South west Nigeria. Other specific objective are:

i. To establish the effect of green recruitment and selection on tertiary institutions' productivity in South West Nigeria.
ii. To ascertain the relationship between green training and development and tertiary institutions' productivity in South West Nigeria.
iii. To study the influence of green induction and orientation on tertiary institutions' productivity in South West Nigeria
iv. To determine the relationship between green reward and compensation management and tertiary institutions' productivity in South West Nigeria.

II. Conceptual Review

The term Green Human Resource Management (Green HRM) was coined 10 years ago (Renwick, Redman & Maguire, 2008) and is defined as "integration of environmental management program into human resource management system of an organization. It is the process of aligning HRM policies and practices strategically towards environmental friendly policies and practices. It aims to reducing carbon footprint of each employee working in the organization providing them with healthy and motivated work culture. Thus it has two elements: (a) Preservation of knowledge capital and (b) Environmental friendly practices (Subhadeep & Soumendra, 2020).

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Environmentally Friendly Human Resource Administration According to research, HRM systems have evolved from antiquated work practices and low levels of human interaction to more accommodating and engaging phases that encourage employees to improve their skills, knowledge, and methods (Harrison & Bazzy, 2017). GHRM refers to HRM techniques that focus on the economic and environmental impacts of businesses in an era of increased awareness of environmental protection and natural resource production (Singh et al., 2020; Siyambalapitiya et al., 2018). It is associated with excellent environmental practices and employee green activities. We believe that GHRM represents sound environmental management practices and is an important part of the literature on sustainable HRM. GHRM acts as a link between environmental management programs and human resource management approaches (Ansari et al., 2020; Masri & Jaaron, 2017). Thus, green HRM reflects the company's intended environmental protection strategy, and senior management is encouraged to prioritize organizational strategies and initiatives that enable employees to adopt environmentally friendly work practices and reduce workplace pollution (Longoni et al., 2018; Singh et al., 2020). "Green human resources management" refers to the implementation of human resource structures such as compensation, training, development, recruiting, and selection that support the company's environmental management goals (Cheema & Javed, 2017; Singh et al., 2020).

III. Dimensions of Green Human Resources Management

Green Recruitment

Green recruitment is the process of hiring individuals with a focus on sustainability and environmental responsibility. It involves incorporating environmental considerations into the recruitment process to ensure that the organization attracts and selects candidates who are not only qualified for the job but also aligned with the organization's sustainability goals (Arago & Jabbour, 2020).

A system known as "green recruiting" emphasizes the importance of the environment and makes it an essential component of the business. Furthermore, the new hires are enthusiastic about working for an environmentally friendly "green" company, and they are even slightly passionate about it. Hiring Employers find it easier to choose candidates with a green mindset because they are already familiar with sustainable practices and principles such as recycling, conservation, and creating a more rational environment. Green recruiting and selection (GRS), a human resource management practice, provides financial incentives to potential employers who implement green HRM practices. Finding and retaining qualified employees is the most difficult challenge for human resource managers worldwide (Mwita and Kinemo, 2018). Businesses that care about the environment market themselves to attract well-known, knowledgeable individuals who share their concerns about sustainability and green initiatives. Alternatively, as green workers, job seekers prepare for global green culture norms. Green workers prefer to work for companies that are both socially and environmentally conscious. Environmental concerns should be considered and addressed in job descriptions and requirements, and the work analysis process should ensure that the selected applicant's requirements are communicated clearly and understandably (Paillé, 2019). A study by Olufemi et al. (2020) investigated the influence of green recruitment practices on organizational performance in Nigerian universities. The findings revealed a positive correlation between the adoption of green recruitment strategies, such as incorporating sustainability criteria into job descriptions and candidate evaluations, and organizational productivity. Institutions that prioritized environmental values in their recruitment process were found to have higher levels of employee engagement, commitment, and performance, ultimately contributing to enhanced productivity.

Green Training and Development

Green Training and Development refers to the educational programs and activities within an organization designed to enhance employees' knowledge, skills, and attitudes toward environmental sustainability. It focuses on equipping staff with the competencies needed to contribute to the organization's environmental goals and to adopt sustainable practices in their daily work. Green Education and Training According to Arago and Jabbour (2017), green training is one of the most important green human resource initiatives for improving business green management performance. Environmental training is one of the most effective HR development strategies. The objectives are to increase energy and waste conservation, promote green activities, and raise public awareness of environmental issues (Zoogah, 2018). According to Teixeira et al. (2016), environmental training can significantly improve the effectiveness of environmental management systems. According to Teixeira et al. (2016), environmental planning is also necessary for implementing the environmental management framework and cultivating a green corporate culture. According to Mishra (2017), addressing climate change requires systematic low-carbon commodity production that is environmentally friendly. Saeed et al. (2019) argue that businesses should provide customized and specialized green employee training. An efficient tool is also used to evaluate the training program's effectiveness. Rawashdeh (2018) suggested that future training programs and work rotations for green managers include specific doable strategies for energy management, waste handling, green workplace research, safety and recycling training, environmental conservation, and environmental training. These training programs must focus on educational requirements in order to produce significant environmental benefits (Masri and Jaaron, 2017).

Green Orientation and Induction

Green Orientation and Induction refer to the processes through which new employees are introduced to an organization's environmental values, policies, and practices as part of their onboarding experience (Arago & Jabbour, 2017).

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Green induction and orientation programs in tertiary institutions serve as vital mechanisms for introducing new employees to sustainability practices, policies, and expectations (Adeniji, 2020). These programs play a crucial role in fostering a culture of environmental responsibility and stewardship among staff, which can have a significant impact on organizational productivity (Adelakun & Yusuf (2018). Research indicates that green induction and orientation programs positively influence employee engagement in tertiary institutions. By incorporating sustainability principles into the onboarding process, these programs communicate the institution's commitment to environmental sustainability, which can enhance employees' sense of purpose and belonging. According to Smith and Jude (2017), employees who participate in comprehensive green induction programs are more likely to feel connected to the organization's mission and values, leading to greater job satisfaction and commitment. This heightened engagement can translate into higher levels of productivity and performance among staff.

Green reward system and Compensation management

Green Reward System and Compensation Management refers to the integration of sustainability principles into an organization's reward and compensation strategies. This approach incentivizes employees to engage in environmentally responsible behaviors and contribute to the organization's sustainability goals by linking rewards, bonuses, and other forms of compensation to green performance metrics (Cohen, Taylor, & Muller-Camen, 2012).

Employees who achieve their environmental objectives and devise novel ways to protect the environment while using the fewest resources possible are encouraged to work for companies that provide green reward systems and green compensation (monetary and non-monetary rewards) (Mwita & Kinemo, 2022). Awards based on recognition are given to candidates who have significantly exceeded their green goals. As a result, more research is needed to assess the level of awareness of Green HRM practices at an academic institution and to assist employees in taking action to protect the environment (Rawashdeh, 2018). Green reward systems and compensation management are increasingly recognized as strategic tools for promoting sustainable behavior and achieving environmental objectives within organizations. Adebayo, (2022) states categorically that green compensation structures will foster employees' recognition programs, and other incentives in driving sustainable behavior and fostering a culture of environmental stewardship.

Organizational Productivity

According to Ghosh (2017), organizational productivity is the outcome of all organizational operations and can be measured by assessing the effectiveness and efficiency of the organization's current course of action. According to the resource-based theory, cooperation can succeed if organizational resources are well managed, resulting in favorable outcomes and market leadership (Singh et al., 2019). Several factors contribute to the productivity of tertiary institutions in Nigeria. These factors encompass both internal and external elements that impact the efficiency and effectiveness of educational processes. Internal factors may include leadership and management practices, faculty qualifications and motivation, infrastructure and resources, curriculum design, teaching methodologies, and administrative procedures. External factors encompass regulatory frameworks, funding mechanisms, socioeconomic conditions, technological advancements, and stakeholder expectations. Research by Adeyemi and Akinlabi (2019) highlights the significance of these factors in shaping the productivity levels of Nigerian tertiary institutions and underscores the need for comprehensive strategies to address them.

Green organizational productivity is the result of implementing environmentally friendly strategies and policies. To benefit from environmental protection, organizations are encouraged to implement appropriate environmental management practices (Jabbour, de Sousa Jabbour, Latan, & de Oliveira, 2016). Numerous universities have implemented tactical organizational performance initiatives to gain a competitive advantage (Alonso-Almeida et al., 2018). Investors believe that companies that care about the environment are expensive. According to stakeholders, environmental achievement will improve corporate performance because students and other key stakeholders trust green institutions (Chiu et al., 2020).

The productivity of tertiary institutions in Nigeria is increasingly being influenced by the adoption of green human resources practices, which aim to integrate environmental sustainability principles into organizational operations for optimal performance for the stakeholders' satisfaction (Harrison & Bazzy, 2017). Green human resources practices encompass a range of strategies aimed at promoting environmental sustainability within organizations. These practices may include green recruitment and selection, green training and development, green induction and orientation, and green reward management. Productivity of an organization began from attracting candidates with environmentally friendly mindsets, also focus on enhancing employees' awareness and skills related to sustainability practices as well as orientation programs familiarize new employees with the organization's environmental policies and initiatives, through reward management systems that incentivise environmentally responsible behavior among staff for effectiveness and efficiency of the organizational performance (Cheema & Javed, 2019; Singh, 2020).

Theoretical Review

The study is underpinned by Resource-Based Theory of Wernerfelt, B., (1984).

Resource-Based Theory serves as the study's foundation (RBV). Wernerfelt, B. introduced Resource-Based Theory (RBV) in 1984. According to Resource-Based Theory, specialized and non-replicable resources enable the possibility of heterogeneity, resulting in a competitive advantage. As a result, a company's ability to apply these specific organizational skills consistently and

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sustainably over time is essential for both business and environmental strategy (Wernerfelt, 1984). An organization's internal environmental competency determines its basic environmental capabilities, such as pollution control (Hart, 1995). A company's ability to invest in people rather than capital (Hart, 1995) and consistently improve internal operations (Russo & Fouts, 1997; Sharma & Vredenburg, 1998) is a requirement for maintaining these skills. Environmental plans that are implemented without these core competencies have a lower chance of meeting their strategic objectives (Christmann 2000). To improve the organization's overall outcome (environmental performance), this evaluation focused on the outcomes of green HRM at the employee level (employee green attitude, employee green competence, and employee green behavior). Thus, from an internal standpoint, the resource-based perspective asserts that the workforce's green outcomes are critical. Thus, taking resource-based theory from an internal perspective, this review validates the concept of green HRM outcomes. Furthermore, the RBV states that a company's competitive advantage is primarily derived from its valuable, scarce, unique, and imperfectly substitutable resources (Wernerfelt, 1984; Barney, 1991; Bowman & Ambrosini, 2000; Lockett, Thompson, & Morgenstern, 2009). A number of writers have used the RBV in strategic HRM (Wright, McMahon, & McWilliams, 1994; Wright, Dunford, & Snell, 2001), but not in green HRM (Wright, McMahon, & McWilliams, 1994; Wright, Dunford, & Snell, 2001). According to the authors who employed strategic HRM, the workforce's knowledge, skills, and actions are critical resources that contribute to the firm's competitive edge.

Empirical Review

Lawal and Al'Hassan-Ewuoso (2023). In particular, their study examined the effects of green pay and benefits and green communication on workers' performance in Federal Tertiary Institutions located in Ogun State. The study was conducted at three Federal Tertiary Institutions in Ogun State. A survey research design was employed for the study. The 1441 academic staff members of the Federal Tertiary Institutions in Ogun State, Nigeria, who comprised the study's population, were divided into a sample size of 303. A purposive selection technique was used to select the sample because these institutions are the only Federal Tertiary institutions in the State. The sample size was calculated using the Taro Yamane sample size calculation formula. The systematic, tailored questionnaire was used to collect primary source data for the research. Cronbach Alpha statistics and component factor analysis were utilized to assess the instrument's psychometric qualities, or validity and reliability. In order to evaluate the descriptive and inferential statistics of the study's data, multiple linear regression analysis was conducted using SPSS software version 26. The study finds that green benefits and compensation have a positive, notable effect on workers' performance. The study concluded that there is a strong positive correlation between employee performance and green human resource management based on its findings.

Ozlem and Serife (2022) looked at how university students are perceived as potential employees and how green HRM practices encourage employees to engage in environmentally friendly behavior. Students from the primary university in North Cyprus comprised the study's sample. A total of 400 questionnaires were distributed, and 342 valid answers were received back. Using the analysis of moment structures (AMOS) software version 24.0, factor, regression, and correlation analyses were carried out along with confirmatory factor analysis. The results showed that, both directly and indirectly, green human resource management influenced prospective employees' views of voluntary and task-related green behavior through psychological mediation of green climate perception. This study highlighted the necessity of integrating sustainable elements into HRM divisions and the part GHRM practices play in attaining sustainability. By focusing on the green side of HRM, this study adds to the body of knowledge on behavioral HRM. It also provides insight into how students, who may become future employees, perceive GHRM practices, which may influence their future green workplace behaviours.

Green innovation and its significance were the focus of Ahakwa's (2021) study on Ghana's environmental performance and green HRM practices. Using simple random chance sampling, information was collected from 300 business owners and employees of ten (10) small and medium-sized manufacturing companies in Ghana's Greater Accra region. In light of incomplete and absent data, the analysis considered 294 correct responses out of a total of 900. A partial least-squares analysis was performed on the data, which was based on structural equation modeling. The results revealed that the study model had no multicollinearity issues, and the data met the criteria for convergent, discriminant, and internal consistency reliability. The study's findings show that there is a significant and direct relationship between green HRM practices and environmental performance. Furthermore, green innovation mediated the effects of green HRM practices on environmental performance. Green innovation-based compensation has the highest impact on environmental performance, with a statistical significance of $p<0.01$.

IV. Methodology

The study adopted a cross-sectional survey research design with the aid of structured questionnaire. The major benefit of cross-sectional research design for this study is that the researchers would be able to collect and compare several variables in the study at the same time. The population of this study are the employees of the six selected Federal Polytechnics in South west Nigeria namely: the Federal Polytechnic Ilaro (1009), Yaba college of technology (1411), Federal Polytechnic Ayede (356), the Federal polytechnic, Ado Ekiti (886), Federal Polytechnic, Ede (778), Federal Polytechnic Ile-Oluji,(578). The study adopted multi-stage sampling techniques in order to drawn sample from each sample unit of our geographically spread population. The population were further divided into homogenous groups where an aggregate sample of 371 was estimated using Taro Yamani sample size calculator at 5% margin of error. It is calculated using equation (1)

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$$n = \frac{N}{1 + Ne^2} \quad (1)$$

Where n is the sample size to be estimated

N represent the total population (N = 5,028)

e is the margin of error, stated at 5%

Therefore, the total sample is thereby given as

$$n = \frac{5{,}028}{1 + 5{,}028(0.05)^2} = 371$$

Table 1: Population and Sample Size Determination

S/N	**Institutional Name**	**State**	**Population**	**Sample**
1.	Federal Polytechnic, Ilaro	Ogun	1009	75
2.	Yaba College of Technology	Lagos	1411	104
3.	Federal Polytechnic, Ayede	Oyo	356	26
4.	Federal Polytechnic, Ado-Ekiti	Ado-Ekiti	886	65
5	Federal Polytechnic, Ede	Osun	788	58
6.	Federal Polytechnic, Ile-Oluji	Ondo	578	43
	TOTAL		**5,028**	**371**

Source: Researchers' Self-Compilation, 2024

Thus, the researchers collected data from a sample of the six (6) Federal Polytechnics in Southwest Nigeria with the aid of structured self- administered questionnaires and further distributed in proportional to the population of each selected Polytechnic. The data for this study was mainly gotten from the primary source through the structured and validated questionnaire. The sampling frame were both academic and non-academic staff of the selected Federal Polytechnics within the Southwest Nigeria, with a minimum qualification of senior school certificate and diverse marital status.

The data was analyzed with partial least square structural equation model (SEM) in order to determine the complex relationships between observed and latent (unobserved) variables. Also to ascertain the multivariate approach that combines factor analysis and regression analysis so as to estimate a set of linear relationships between variables. From the survey conducted, about 359(96.8%) of the research instrument was valid and returned, of which our statistical analysis was based upon.

V. Results and Discussion

Table 2: Descriptive statistics, Test of Normality and Multicolinearity

Statistic	**GIO**	**GRCM**	**GRS**	**GTD**	**OP**
Mean	0.000	0.000	0.000	0.000	0.000
Median	-0.333	0.181	0.149	0.008	0.198
Observed min	-1.847	-3.126	-3.888	-2.723	-3.832
Observed max	3.188	1.389	2.027	3.340	1.442
Standard deviation	1.000	1.000	1.000	1.000	1.000
Excess kurtosis	0.505	-0.348	1.937	0.096	0.439
Skewness	0.872	-0.745	-1.021	0.168	-0.938
Number of observations used	358.000	358.000	358.000	358.000	358.000
Cramér-von Mises test statistic	1.444	1.659	0.417	0.398	1.551
Cramér-von Mises p-value	0.000	0.000	0.000	0.000	0.000
VIF		1.003	1.159	1.170	1.026

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OP = Organizational Productivity; GRS =Green Recruitment and Selection; GTD= Green Training and Development; GIO = Green Induction and Orientations; GRCM = Green Reward System and Compensation Management.

Result of Table 2 depicts the descriptive statistics, test of mulitiolinearity and Normality of the latent variables under study. Result showed that all variables (GIO, GRCM, GRS, GTD, and OP) have a mean of 0 and standard deviation of 1, an indication that the values are standardized. The medians and observed min/max values provide insights into the data distribution. The skewness and kurtosis values of the variables showed that the standardized values are non-normal, with statistical significance of the cramer-von Mises test statistics (p-values <0.05), an evidence of non-normality of data, of which SEM can accommodate by assuming multivariate normality in large samples. Despite non-normality of the data, the VIF values are close to 1, an indication that green human resources practices as proxied by GRS, GTD, GIO AND GRCM are not correlated with each other, suggesting that multicollinearity is not a concern, allowing for reliable SEM results.

Table 3: Correlations between Constructs

	GRS	***GTD***	***GIO***	***GRCM***	***OP***
GRS	1				
GTD	0.328502	1			
GIO	0.248021	0.662695	1		
GRCM	0.405279	0.058488	0.08161	1	
OP	0.388706	0.041167	0.048617	0.528064	1

Interrelationship between constructs can be evidenced in Table 3. Result indicated a direct moderate positive relationship of green recruitment and selection with organizational productivity (r = 0.38871), an implication that effective green recruitment can enhance productivity. However, Green Training and Development (GTD) is weakly correlated with productivity (r=0.041167), suggesting that while GTD is crucial, its direct impact on productivity is limited and may influence through other constructs like GIO. Green Induction and Orientation (GIO) exhibits strong interrelationship with GTD (r = 0.662695) but weak direct correlation with Organizational Productivity (r = 0.048617). This implies that while orientation is aligned with training, its direct impact on productivity is less pronounced. But GRCM indicated a strong correlation with productivity (r = 0.528064), an implication that reward systems significantly drive organizational productivity.

Hence, the correlation matrix showed that among the constructs, GRCM has the most substantial direct impact on productivity, followed by GRS. GTD and GIO, while related, have indirect influences on productivity. These relationships were further explored through SEM path analysis to understand the direct and indirect effects fully.

Table 4: Cronbach's Alpha Reliability Test of Constructs and Composite Reliability

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**
GIO	0.702	0.711	0.724
GRCM	0.820	0.766	0.708
GRS	0.707	0.793	0.760
GTD	0.680	0.658	0.609
OP	0.865	0.788	0.716

From Table 4, the Cronbach's Alpha measures internal consistency of the constructs on acceptable threshold >0.70 for reliable constructs while the composite reliability (rho_a and rho_c) measures the overall reliability of the construct. Result indicated that most of the constructs are reliable, with the exception of GTD, which has lower reliability scores. This suggests that while the other constructs are consistent and dependable for further analysis, GTD might need refinement for improved reliability. The reliability of the constructs supports the robustness of the SEM analysis in exploring the relationships between green HR practices and organizational productivity.

Fig. 1: PLS Algorithm for Direct Model

Table 5: Factor loadings and Cross Loadings

	GIO	**GRCM**	**GRS**	**GTD**	**OP**
GIO1	0.935	-0.010	0.049	-0.032	-0.105
GIO2	0.286	-0.027	0.049	-0.100	0.034

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GIO3	0.370	0.038	0.079	0.043	-0.013
GIO4	-0.053	0.003	-0.022	-0.161	0.006
GIO5	-0.283	0.017	0.044	0.100	-0.015
GRCM1	-0.224	0.015	0.035	-0.004	-0.012
GRCM2	-0.184	-0.102	0.040	-0.026	-0.113
GRCM3	0.016	0.641	0.292	-0.012	0.333
GRCM4	-0.081	0.774	0.240	0.073	0.377
GRCM5	-0.079	0.626	0.289	0.084	0.360
GRCM6	0.073	0.603	0.174	0.147	0.341
GRS1	-0.088	0.023	0.112	-0.059	0.073
GRS2	-0.035	0.150	0.518	-0.032	0.146
GRS3	-0.013	0.251	0.641	-0.017	0.265
GRS4	-0.081	0.331	0.746	0.133	0.309
GRS5	-0.222	0.041	0.282	0.080	0.052
GRS6	-0.160	-0.044	-0.326	-0.289	-0.165
GTD1	-0.160	0.126	0.244	0.710	0.119
GTD2	-0.112	-0.034	0.076	-0.572	-0.055
GTD3	-0.266	0.074	0.105	-0.007	-0.002
GTD4	0.059	0.021	0.035	-0.369	-0.033
GTD5	-0.254	-0.009	-0.040	-0.111	-0.018
GTD6	-0.087	-0.024	0.026	-0.520	-0.062
OP1	0.037	0.408	0.335	0.061	0.719
OP2	0.022	0.413	0.230	0.110	0.635
OP3	0.042	0.288	0.289	0.099	0.664
OP4	0.145	0.355	0.270	0.089	0.706
OP5	0.095	0.316	0.188	0.019	0.577
OP6	-0.082	-0.091	-0.102	-0.264	-0.221

Source: Extracted from SMART-PLS Output, version 4.0

This study assessed construct validity through factor loadings, presented in Table 5. While Hair et al. (2012) suggest a 0.70 threshold, other studies (Chin, 2010; Gefen et al., 2000) consider 0.50 acceptable. Here, a cut-off of 0.5 was chosen. Red-colored loadings indicate items removed due to low values. These deletions aimed to achieve a more consistent estimate of average variance explained (AVE). Hair et al. (2012) support this approach, arguing that items below 0.70 can be retained if AVE exceeds 0.50. The resulting constructs, after removing items with low factor loadings, are presented in Table 6.

Table 6: Hypothesized measurement model (Convergent validity)

Model Construct	**Indicators**	**Loading**	**Average Variance Extracted (AVE)**
Organizational Productivity	**OP1**	0.719	0.835
	OP2	0.635	
	OP3	0.664	
	OP4	0.706	
	OP5	0.577	
Green Induction and Orientations	**GIO1**	0.935	0.296
Green Reward System and Compensation Management	**GRCM3**	0.641	0.697

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	GRCM4	0.774	
	GRCM5	0.626	
	GRCM6	0.603	
Green Recruitment and Selection	**GRS2**	0.518	0.739
	GRS3	0.641	
	GRS4	0.746	
	GTD1	0.710	0.674
	GTD6	0.520	

On the analysis of the convergent validity in Table 6, the Average Variance Extracted (AVE) measures the amount of variance captured by a construct's indicators relative to the amount due to measurement error. An AVE of 0.50 or higher implies adequate convergent validity. The loading range of organizational productivity is between 0.577 to 0.719 with an AVE of 0.835 indicated an excellent convergent validity. Green reward system and Compensation Management (GRCM) (loadings range 0.603 to 0.774, AVE = 0.697), Green Recruitment and Selection (GRS) (loadings range 0.618 to 0.746) and Green Training and Development (GTD) (loadings range 0.520 to 0.710, AVE = 0.674) were all found to have an AVE above the threshold of 0.5, an indication of good convergent validity. Only GIO possess an AVE below the threshold, indicating poor convergent validity. This generally implies that most constructs exhibit good convergent validity, supporting the robustness of the SEM analysis. The strong convergent validity of the other constructs indicates they are reliable for further analysis within the SEM framework.

Table 7: Evaluation of the Full Structural Model

Variables	**R^2 [R^2 Adjusted]**	**f^2**	**Effect size rating**
Organizational Productivity	0.658 [0.581]	-	
Green Induction and Orientations	-	0.323	Small effect
Green Reward System and Compensation Management	-	3.270	Very large effect
Green Recruitment and Selection	-	2.474	Very large effect
Green Training and Development		1.246	Very large effect

Source: Extracted from SMART-PLS Output, version 4.1

Evaluation of the full structural model can be evidenced in Table 7. Result showed from the R^2 that 65.8% of the variance in organizational productivity is explained by the independent variables in the model. The adjusted R^2 of 58.1% accounts for the number of predictors and the sample size, providing a more accurate measure. The high R^2 and adjusted R^2 values indicate that the model explains a significant portion of the variance in organizational productivity. More so, the large f^2 values for majority of the constructs suggest that each of the green HR practices has a substantial impact on organizational productivity. Based on the order of importance, Green Reward System and Compensation Management (GRCM) has the largest effect (3.270), followed by Green Recruitment and Selection (GRS) (2.474), Green Training and Development (GTD) (1.246) and Green Induction and Orientations (GIO) (0.323).

For Federal Polytechnics in Southwest Nigeria, our findings demonstrate that green HR practices are crucial for improving organizational productivity.

Table 8: Goodness of Fit

GOF Criteria	**Results of Research Model**
Chi-square (X^2)	1.992
Goodness of Fit Index (GFI)	0.931
Standardized Root Mean Square Residual (SRMR)	0.105
Normed Fit Index (NFI)	0.951
Tucker-Lewis Index (TLI)	1.056

Source: Extracted from SMART-PLS Output, version 4.1

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From the goodness of fit result of Table 8, the very low value of 1.992 indicates an excellent fit of the model to the data, Both GFI and NFI indices are well above the 0.90 threshold, confirming that the model has a good fit. Overall the results suggest that the structural equation model (SEM) used in the study is a good fit for the data, providing reliable insights into the relationships between green HR practices and organizational productivity. Minor adjustments could be made to improve the SRMR value, but the overall fit is strong.

Table 9: Result of Structural Model Coefficients

	Path coefficients	Standard Error	T-statistics	p-values	Remarks
GIO -> OP	0.123	0.035	3.512	0.000	Significant
GRCM -> OP	0.448	0.053	8.385	0.000	Significant
GRS -> OP	0.235	0.050	4.711	0.000	Significant
GTD -> OP	0.062	0.099	0.627	0.531	Insignificant

Source: Extracted from SMART-PLS Output, Version 4.1.

From Table 9showing the structural model coefficients, it can be evidenced that variables GIO ($A_{GIO} = 0.123$, T-statistic = 3.512, $p < 0.05$), GRCM ($A_{GRCM} = 0.448$, T-statistic = 8.385, $p < 0.05$), and GRS ($A_{GRS} = 0.235$, T-statistic = 4.711, $p < 0.05$) have significant positive effects on organizational productivity. This highlights the importance of these green HR practices in enhancing productivity in the selected tertiary institutions in Southwest Nigeria. Among these, GRCM has the strongest impact, followed by GRS and then GIO. However, GTD ($A_{GTD} = 0.062$, T-statistic = 0.627, $p > 0.05$) does not have a significant impact on organizational productivity, suggesting that training and development practices, as implemented, do not significantly contribute to productivity improvements in this context. It is evidenced that the constructs were within the a priori expectations as they were found to directly impact organizational productivity. Significance test of the predictors path coefficients, thereby justifies the achievement of the state broad aim and specific objectives.

VI. Discussion of Findings

This paper dwelt on the examination of the effect of green human resources on the organizational productivity of the selected tertiary institutions in Southwest Nigeria. Measuring Green Human Resources with green indication and orientation, green reward system and compensation management, green recruitment and selection, and green training and development provided significance influence on the tertiary institution's productivity (See Table 7) as evidenced from the structural equation results. Joint effect of this result is in tandem with the study of Atoko (2023) where an African perspective of green human resources management practices on organizational performance was studied and concluded that implementation of green human resource management practices by organizations contributes to benefits such as improvement of the public image of an organization, competitive advantage, a loyal and committed staff, high performance, more awareness on environmental protection and an organizational ability to adhere to the laws on environmental protection.

Individual measures of green human resources viz: Green induction and Orientation (GIO) was found to positively influence productivity of Southwestern Nigeria tertiary institution (See Table 9). However, this construct may have small effect (see Tables 7 and 9) but significant contribute to organizational productivity. More so, the result is within the a priori expectation as GIO should have positive influence on organizations' productivity. The findings corroborate with the study of Subhadeep, Soumendra, Nabanita &Urvashi (2020) which their studies concluded that green induction and orientation have significant effect on organizational productivity.

Taking Green reward system (GRS) into consideration, there is an evidence of positive and statistically significant effect (see Tables 7 and 9). Additionally, the effect size is large, an indication that factoring green reward system by the HR of tertiary institution will improve organizational productivity. The result is in relation with the findings of Mowaiye, Akpa, Akinlabi and Magaji (2022) where they researched on Green Human Resource Management Practices and Green Work Life Balance on Operational Efficiency in Selected Hospitality Firms in Lagos and Ogun States, Nigeria using linear regression approach with emphasis on hospitality firms and found that green human resources management practices have significant effect on operational efficiency of the firms. More so, lasan &, Eyanuku (2020), Hayanan, (2020); Edeh & Okwurume, 2019, Bag & Gupta, (2019) also corroborates the findings.

On the Green Reward System and Compensation Management (GRCM), findings shows that, as the variable positively and significantly influence organizational performance, thereby improving HR practices (See Table 9), and its effect size was as well found to be large (See Table 7). This implies that as green reward and system compensation management increases, HR practices (organizational performance) also increases to a greater extent. The result is in relation with the studies of Jabbar, & Abid (2015) & Shoaibi et al., (2021) where they discovered that green reward system and compensation have significant influence in fostering organizational productivity in the context of Pakistani manufacturing firms.

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However, It cannot be overemphasized that as GTD positively impacts organizational performance, it is not statistically significant (p> 0.05) (see Table 9). This generally implies that only this construct do not contribute to the model, but was found to be positively inclined. The findings of this variables is in not in line with the studies of Chayanan, 2020; Edeh & Okwurume, 2019, Bag & Gupta, 2019; Amran, Hung Kee, Nejati, & Yusoff, 2018; Sheikh, Islam & Rahman 2019 who found that green training and development have significant impact on organizational productivity.

Conclusion and Recommendations

Based on the findings of this paper, we thereby conclude that green human resources management practices is crucial for achieving optimal organizational productivity of Federal Polytechnics in South West Nigeria. However, insignificance of green training and development might be as a result of insufficient training recognition, preparation and policy put in place by the administrators of the institutions in Southwest Nigeria. As a result of this, the management of the Federal Polytechnics in Southwest Nigeria should incorporates environmental sustainability trainings, workshops and seminars for staff and students from time to time in order to educates staff and students to engage more actively in environmentally friendly practices on campus for optimal organizational productivity.

In addition, management of the Federal Polytechnics in Southwest Nigeria should use environmental conservative employer branding to attract and select green applicants through a well-defined and circulated environmental sustainability recruitment policy as well as integrated selection programs to create the emotional involvement of employees in environmental management via background check.

The management of the federal Polytechnics in South West Nigeria should formulates and implements environmental sustainability reward and compensation policies through offering of gifts, bonuses and recognition for greener staff and students.

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