GREEN RESOURCES INITIATIVE AND SUSTAINABILITY OF FEDERAL UNIVERSITIES IN NIGERIA

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Abstract
This study examined green resources initiative and sustainability of federal universities in Nigeria. Four selected measures of green resources were exploited to determine their relationships on sustainability. The researcher formulated four specific objectives and adopted a descriptive survey research design. Population of the study comprised 550 employees selected from ten federal universities in Nigeria. The researcher utilized purposive sampling technique and Taro Yamane's formula was employed to determine the sample size at 232.Primary data was collected through a structured questionnaire. Two hundred and thirty two (232) copies of questionnaire were returned as valid after distributions. Spearman rank correlation was used to test the hypotheses and descriptive statistics applied in the analysis of research questions. The findings revealed a positive significant relationship between green resources and sustainability of federal universities in Nigeria. The researcher concluded that green resources influence sustainability and recommended that universities should introduce green change like recycling of papers and use software to capture all the degree results necessary for sustainability performance.
Keywords*: green resources, green change, green culture, green policy, sustainability*

Introduction

The unprecedented changes in the environment and climate call for an urgent attention of countries, societies, and organizations to enforce green resources that may create sustainable future and ensure effective utilization of resources. The exploitation of natural resources comes with environmental pressures (Prasad, 2013). Industrial activities make the environment unsafe for the people within the area of operation which requires protection against pollution, life-threatening famines, flood, and arable land. From all indications, Nigeria appears to be a country subjected to poverty with the negative consequences of climate change where people endure scarcity of food, water shortages, poor power supply (Senge, 1990).Similarly, the dramatic increase in the consumption rates of energy, waste of resources, environmental pollution attracted disregard to organizations during discussions in world environmental day and companies were held accountable for not preserving resources (Pane et al., 2009).Managers that realize the consequences of environmental challenges could satisfactorily respond to such problems by engaging in green resources initiative that reduces waste, save operating expenses, using the right persons, and maintaining amenities (Farrukh et al., 2022).Green resources refer to the ability of organizations to use innovation in achieving

sustainability, reduction of waste, social responsibility, integrated with the environmental and organizational goals (Haden et al., 2009). Indeed, Green resource denotes agreen management with competitive advantage strategy that deploys recycling of papers, maintenance of infrastructures, waste reduction, and beautifying work environment.The rationality of going green is orchestrated by reducing the burden of humans within the industrial and tertiary institutions.

Shaikh (2010) noted that going green is a better alternative for federal universities when they employ competent staff with entrepreneurial skills and utilize internal generated revenue to reduce over dependence on government intervention fund. The perception that higher education institutions are primarily established for teaching, research, and community service are not sufficient they are also created for economic viability that could have control over the global problem on environment. Dowden (2014) claimed that universities are expected to embrace green entrepreneurship by being conscious of the environment and create resource base institutions that could relief federal government of Nigeria the financial burden necessary in promoting either quality education nor economic growth. Apparently, any tertiary institution that adopts green culture is capable to move change and align itself with the current trends to ensure business sustainability and profitability. Loknath and Azeem (2017) emphasized that green practices help organizations to preserve infrastructures and fight against resource depletion. Consequently, green resources maximize benefits for the institutions and improve service delivery at reasonable costs. However, where organizations are insensitive in adopting green resources in recruitment, particularly the management of university is likely to employ incompetent workers with poor teaching experience leading to low standard of education. Numerous federal universities in Nigeria are unable to conduct convocation on yearly basis because of over dependent on government or lack of fund which could be ameliorated through green behaviour. Furthermore, green resources utilize the principles of human resources management to promote environmental protection and accomplish organizational sustainability. Raharjo (2018) illustrated that if companies and universities engage in green resources innovation such as social responsibility, keeping the offices and class rooms clean, releasing staff development fund, change, culture, recruitment, policies, technology, do what is morally right may lead to satisfaction of stakeholders and improve a firm's sustainable performance. Misuse of resources affects the livelihood of employees and sustainability of the institution. This aspect of knowledge shapes the commitment of organizations to achieve sustainability in business without compromising the future need. Daily and Huang (2001) explained sustainability as strategic plans that have opportunity for business to provide long-term solution to enhance the quality of work-life of employees and natural environment. Although, sustainability relates to variables that attract progress and continuity in business. Organizational sustainability includes sustainable

development, corporate social responsibility, social equality, environmental protection, and economic growth (Shukla, 2012). Inspite of few critical researches on green resources this paper examines the impact of green resources on the sustainability of federal universities in Nigeria.

Statement of the Problem

Federal universities in Nigeria have contributed meaningfully in the country's higher education system especially in research, innovation, and human capital development. Universities have potentials to educate, increase the awareness, knowledge, skills and values needed to create a sustainable green economy where natural resources are conserved for forthcoming generation. Nevertheless, the sustainability of these institutions, particularly in terms of green resources and environmental practices, require crucial attention. Misuse of resources and low availability of green resources constitute a fundamental challenge facing federal universities in Nigeria. The work environment is surrounded with visible outdated electrical systems, scarcity of power supply during the work hours, shortage of brilliant staff, waste generation, environmental pollution, and inadequate infrastructures which affect learning and implementation of sustainable practices. Poor learning environment and insufficient funding have created more harm to students and staff in the university such that the students take lectures in discomfort environment with no fans, light, air-conditions, and few chairs. Lack of funds prevent the lecturers from attending international conferences abroad where they can acquire best practices knowledge to improve both their skills and students.

Government could use green resources initiatives and robust research to accomplish ever-increasing needs and demands of the students, employees, and future generation. When tertiary institutions embrace environmental friendly green practices the universities become more competitive on a global scale and sustain quality education. Government and individuals have predominant roles to play in this global fight against resource depletion to ensure the conservation of limited resources. The management, students, and staff of most federal universities are lacking the awareness of providing education on green projects and implementation of eco-friendly work environment. Furthermore, the absence of clear policies and guidelines concerning inclusive sustainability education programs encumbers the integration of green practices into the university culture. Additionally, bureaucratic processes and administrative barriers may also impede the implementation of sustainable projects and hinder the adoption of eco-friendly solutions that emanate from green change like increased funding and infrastructure upgrades.

When universities prioritize sustainability, it helps to reduce poor environmental impression, maintain standard, conserve resources, and contribute to a greener and more viable future for Nigeria. If universities intend to create fund through internal generated revenue it needs sustainable green practices to minimize the hardship

among the workforce. However, inspite of the struggle for the enforcement of green resources initiatives at the federal universities most employees do not attach value to green projects instead they are expecting other welfare packages. In most federal universities, the principal officers namely vice-chancellor, registrar, bursar, and librarian.do not see the relevance of green resources as an integral part of human resources management, hence there is apathy and resistance to embrace the concept completely. The inability to apply green practices on their daily activities resulted in low grant, low standard education, and denial of public from accessing certificates of students, and hinders the sustainable performance of the public universities. This paper investigated the relationship between green resources and sustainability of federal universities in Nigeria.

The general objective of this study is to investigate the relationship between green resources initiative and the sustainability of federal universities in Nigeria. The specific objectives include to:

i. Determine the relationship between green change and sustainability of federal universities in Nigeria.
ii. Examine the relationship between green culture and sustainability of federal universities in Nigeria.
iii. Ascertain the relationship between green policy and sustainability of federal universities in Nigeria.
iv. Investigate the relationship between green recruitment and sustainability of federal universities in Nigeria.

i. To what extent is the relationship between green change and sustainability of federal universities in Nigeria?
ii. To what extent is the relationship between green culture and sustainability of federal universities in Nigeria?
iii. What is the relationship between green policy and sustainability of federal universities in Nigeria?
iv. What is the relationship between green recruitment and sustainability of federal universities in Nigeria?

H^{o1}: There is no significant relationship between green change and sustainability of federal universities in Nigeria.
H^{o2}: There is no significant relationship between green culture and sustainability of federal universities in Nigeria.
H^{o3}: There is no significant relationship between green policy and sustainability of federal universities in Nigeria.
H^{o4}: There is no significant relationship between green recruitment and sustainability of federal universities in Nigeria.

Review of Related Literature

Concept of Green Resources

The variable green resource is derived from green management which entails the use of human resource policies to use the resources effectively and promote sustainability within organizations and the environment (Mandip, 2012). Green resources represent a workplace human resource function that creates opportunity for environmental stewardship (Leibowitz, 2010). Similarly, Opatha and Arulrajah (2014) clarified that green resources initiative is a system of advancing the firms human capital through learning, reducing waste, recruitment, reward management, that are beneficial to the employees, organization, society, and natural environment. Inspite of divers opinions on green resources, it is also a strategic approach that guides the operation of organizations to provide environmental benefits with positive economics and healthy effect for the guarantee of satisfaction inbusiness. The extent to which change strategy and competitive advantage influence green resources is driven by factors that facilitate ecologically friendly economic sustainability. Ordinarily, resources have to be managed into competences to generate value and the ability to go green depends on resources and employee skills which constitute the foundation of a firm. Savitz and Webber (2006) emphasized that organizations that plan to go green are free to absorb conservation and efficient use of natural resources for the benefit of the present and future generations. Green resource is associated with the term "triple bottom line'' which means taking care of people and make profit in the business operations. In order to minimize harm to living creatures and enrich the environment, registry department in universities must incorporate green initiatives as their culture or policies in daily operations to achieve green institutions (Strandberg, 2009). Consequently, Institutions of higher education need to come out from their comfort zone of depending on government for survival and focus on challenge of wastage resources, climate disruption and natural environmental degradation (Cohen et al., 2012).

The social integrity of university to sustain its activities emanates from the responsibility of management to develop green resources that consist of staff welfare, retention, maintenance of infrastructures, cost reduction, recycling, standard education, improving employee's skills, productivity, and positive business reputation (Bartlett, 2011). This assertion was in accord with Prasad (2013) who narrated that green resources develop the individual competencies, collaborative culture required to support the organizations' sustainability journey. However, most of the employees in the federal universities have not justified the principles of green resources but interested in personal enrichment. It is within the content of this view that Jabbour (2011)claimed that a green and sustainable university is a workplace which educates people to accomplish the needs of the students, staff, and take care of the environment. The priority of employees and management of an organization is not limited to economic gains of growth but very crucial for them to be held

accountable for their impacts on society and the environment. Ahmad (2015) stipulated that green resource factors in environment management are conceptualized as green change, green culture, green policy, and green recruitment which are the key elements of implementation process of achieving organizational sustainability.

Green Change

Change happens when there is transformation in roles of people, strategies, methods, and the structure inorganization (Aninkan, 2018).Organizational change connotes amendment of policies, decisions, and rotation of structural relationship. It exists where organization makes a transition from its current position to a higher level. Apparently, green change is the real change that improves the behaviour of employees and creates prosperity in the organization (Luketa, 2012). However, a change could have negative impact on either individuals or organization depending on the circumstances, such change needs to be reviewed for the purpose of achieving sustainable organizations. Change is inevitable It may occur at any time in the organizations. The rate of changes in the society is high and sometimes change is permanent. Green practitioners have surpassed the traditional roles of human resource and adapt to change with the aim of delivering value, profitability, productivity, and sustainability to the organization (Muo & Muo, 2014).Thevice-chancellors of universities have a task of bringing change that could transform the institutions for greater future. Wirtenberg et al. (2007) disclosed that principal officers and directors are required to integrate green change by doing the right thing at the right time and invest on modern infrastructures, make entrepreneurial skills compulsory for all the students, employ competent staff that could improve ethical leadership and organizational sustainability. The service which the leaders render influences the outcomes that enhance the organization's value to customers, employees, and investors. A green manager or vice-chancellor focuses on having legacy, visible achievement that improves the lives of workers rather than social media praises. It is imperative for the change to be holistic free from witch-hunting perceived opponents but implemented for the benefit of the organization.

Goal oriented change is capable of transforming the tertiary institutions and mandated to start from top level management to the bottom, where every person has freedom of speech. Indeed, organizational change provides the feedback and competences needed to meet the expectations of internal and external customers. Ulrich (1998) noted that management of university that fails to practice change may expose itself to danger, low performance, and public criticism. Meanwhile, several literatures have acknowledged thatthe orthodox methods of performing jobs like manual computation or conservation of degree results in the universities do not represent green change phenomenon, hence it is necessary for registrar to assist the

university to change and achieve sustainability (Jabbour, 2011; Liebowitz, 2010; Prasad, 2013).

It is quite unfortunate that majority of university degree results in Nigeria are kept in the secret files without allowing the world to have access through internet which is contrary to the change philosophy. When green resource is adopted it uses change to raise standards, enhances administrative processes, and minimizes unnecessary wastage of paper, as well as frightening the bottleneck in bureaucracy. Nevertheless, employees may resist change when they feel fear of demotion, loss of job, and self-fulfillment could be affected. Globalization has made organizations not to operate in isolation. It has to change in accordance with the global standards. There are also some changes required as a result of emergency conditions. For example, during Coronavirus period new method of online teaching is employed in place of class room teaching. Similarly, green change is demonstrated in virtual conference where academia delivers their papers through zoom.

Change in management brings about new ideas and leadership to correct the existing deficiencies of structure and work behaviour. The sustainable performance of university emanates from the adoption of change in new cost-effective and efficient administration processes. This includes efficient use of technology in the performance of daily activities namely e-recruitment using an online application system, e-payment, computer training systems, and zoom interviews for candidates who are outside the institution. The human resource or registry department in tertiary institutions has the strategy framework to influence change with significant roles in ensuring sustainability and profitability of a business. (Strandberg, 2009). Although, to create a green organization does not happen overnight but may take time. It requires workers commitment, co-operation, team work, and group action. Ryan et al. (2012) narrated that green administrators are different from the old personnel managers, they have comprehensive knowledge in business and the industry. They could utilize strategic human capital skills to successfully implement the change desired to create sustainable work environment.

Types of Green Change

Naoler and Tushman (1999) identified some categories of green or organizational change as strategic change, people oriented change, structural change, technological change, and unplanned change.

a. Strategic change: This refers to changes in business policies, structure, or processes. Strategic changes are essential in the organizations to attain goals, prepare employees for market opportunities and enhance competitive advantage in the business. The top management has a duty to formulate and implement strategic change. Besides, strategic change exists in gaining customers, Innovation, technology, and restructuring in the form of downsizing or upsizing the workers.

b. People oriented Change: People oriented change has to do with change that affects employees such ashiring new employees, introducing new leave policies, training of workers. Changes in the duties of employees may require additional training and reshuffle of work group. It is also process oriented change that involves salary increment and new pattern of delivery reports to customers. Consequently, in implementing change the leadership needs to be transparent with these workers, give the reasons for such radical changes, and probably provide reasonable answer to any question that the employees may have regarding the change.

C. Structural change: This relates to change in organization's structure that come from internal or external factors affecting the activities of the institutions. This change defines the relationship among various positions. It consists of major shifts in the management hierarchy, job structure, the responsibilities of different departments, and unity of command. Factors that contribute to structural change include policy changes, mergers and acquisitions, job duplication, and changes in the market. For example, if company A merges with company B employees from both companies are reassigned to new positions, replication of departments are eliminated, and new policies and procedures are created.

d. Technological change: Technology is the brainbox of digital transformation that enables individuals and organizations to achieve a set objective. Increase in market competition and the extent of technological advancement provides the opportunities for change in technology within organizations. Basically, technology change emphasizes on identifying new technology and implementing a digital strategy for improved productivity, profitability, and sustainability. Technology change involves introducing new computers, software or system to improve business practices. Similarly, organizations are obliged to invest in digital technologies to manage change initiatives.

e. Unplanned change: An unplanned change is when immediate action is taken based on unexpected situation. This type of change cannot be predicted but can be controlled with effective change management. For example, organization may change decision to transfer some employees to rural areas to handle the outbreak of virus necessary for safety of people. Organizations could as well direct their workers to work from home during the COVID-19 pandemic. Unplanned change becomes an option to organization if a competitor company plans to hire a talented employee from his current company using higher salary. The employee company has to use succession planning approach to change the plan of employee turnover and increase his salary with promotion in order to retain the employee.

Green Culture

Schein (2004) defined culture as pattern of shared basic assumptions which people learn to solve related problems of external adaptation and internal integration. A culture symbolizes assumption, values, belief, artifacts like visible organizational structures and education shared to guide the individual's daily work behaviour. Organizational culture plays active role in achieving success and sustainability in business. It is important for organizations to investigate the kind of culture they have if it is consistent with green best practices because companies with rigid culture and bureaucratic structures have difficulties in implementing changes as compared to an organization with flexible and green organizational culture (Guerci & Carollo, 2016). This assumption was confirmed by Milliman and Clair (1996) who highlighted that organizations need to institutionalize green resources initiative which means, conservation of resources should become part of the organization's core systems, culture and values. Ordinarily, to achieve a green university involves having a clear vision, goals and common beliefs that could eventually form its unique culture. Employees work attitudes involve imbibing the culture of maintenance, recycling, reusing, and utilizing every natural resource at their disposal for the sustenance of the organization(Guerci & Carollo, 2016).Federal universities are entitled to uphold the green philosophy in artifacts by having buildings, electrical systems, staff quarters, canteen, event centers, farms, technology systems, and water systems. In view of the global best practice organizations are working immensely to achieve green offices, with sophisticated fittings, furniture, and green buildings as an alternative to outdated offices (Popli, 2014). The availability of the green culture or artifacts motivate employees to express commitment and attain sustainability. Most organizations use human resources department to create culture of sustainability. Transformation and changing of culture is predominant to ensure sustainability and green campuses in any institution. Organizational culture promotes goals by training employees that could maximize the likelihood of environmental efficiency and success within the organization (Norton et al., 2015) Organizational culture is created to provide a sense of identity to employees about the vision and goals of the firm. In addition, organizational culture guides the decisions of employees by establishing the expectations that borders on what is valued and how things should be done.

Green Policy

Policy refers to guidelines that are defined by top level management of an organization (Ramus & Steger, 2000).Organizational policies are rules and regulations that guide employees in the performance of their duties. Although, policy must be made public stated in official handbook and communicated to

employees (Daily &Huang, 2001).organizational policies are not only designed to describe the responsibilities for the employer and the employees but also create a framework of reference for handling the controversial issues that arise in an organization. Organization may have a policy that reduces costs especially where employees travel on behalf of a company for outside duty, the company may have policies for submitting travel budgets that cover, feeding, transportation, accommodation, and rental cars approved before the trip. Apparently, most Universities normally send their teaching and non-teaching staff to training, workshop, and conferences through financial support from Tertiary Education Trust Fund (TETFUND).Environmental policies can be drafted on various issues within the organization such as safety, break hour, dress code, use of building for events, review of salary, and sexual harassment. Organization may provide transport vehicle that carries the workers to job and bring them home at the end of daily work. The policy states that any staff that wants to benefit from the company transportation service shall pay certain amount of money every month through salary deduction. A green policy protects the business from legal risk and guarantees the company proactive success which facilitates sustainable human capital development (Lee, 2009). Furthermore, policies are explicit in terms of accountability which contain punishable measures for those who violated it. Boudreau and Lawler (2014) elaborated that, the higher the strength of green human resource policies, the greater is the productivity with effective management systems within the organizations.

Green Recruitment

Nwinye (2022) described recruitment as a systematic procedure established by organizations to search for qualified candidates that are ready to occupy the vacant positions. Recruitment is a system upon which the prospective employees are discovered for the benefit of the organization. Green recruitment consists of fair and successful recruitment that improves business performance by engaging environmentally sensitive employees. Besides, for an organization to have green recruitment it must have manpower planning and succession planning (Strandberg, 2009).In pursuant to green recruitment trajectory the employees are to be enthusiastic about working for an environment-friendly organization. Ahmad (2015) stated that employing candidates with a green initiative makes it easy for firms to receive professionals who are familiar with elementary principles ofgreen resources like recycling, conservation, and creating a more sustainable work environment. Engaging green staff including lecturers in the university helps to achieve excellence and organizational sustainability. Bleeding in academic environment happens when the management of the university employs mediocre who are incompetent to teach students. You cannot give what you do not know, this academic miscarriage leads to low standard of education and inefficiency. Ahmad (2015) noted thatemployers with poor green credentials could lose out in the search for talented individuals, the

recruitment process should be aligned with environment-friendly performance. It is important for organizations to employ candidates who have skills and green resources orientation as part of their core mission to achieve innovation and environmental sustainability (Shukla, 2012).

Sustainability

Sustainability entails fulfilling the needs of current generations without compromising the ability of future generations to satisfy their own needs (Jabbour &Santos, 2008). Sustainability refers to social and environmental factors like quality services, products, profits that bring satisfaction to the people. Savitz (2006) asserted that sustainability connotes triple bottom line which implies taking care of three very important elements such as people, environment, and profits. Ordinarily, sustainability keeps the business going by creating value consistent with the long-term preservation and enhancement of social capital. Jabbour and Santos(2008) stated that green resources are created to develop a culture of sustainability by pronouncing the values and beliefs that buttress the organizational objectives. UNEP, (2014) emphasized that green resources and sustainable organizations have significant relationship to accomplish the needs of the present generation. Sustainability in Institution involves protection, development of human and social assets using employee commitment to support community without compromising the ability of the upcoming generations. Indeed, a green sustainable organizationis surrounded with vital characteristics namely it must have principles of sustainability in all business decisions, it must provide environmentally friendly products or services, it should be greener than its competitors in its daily operations, and it must guarantee commitment to environmental principles in its activities (Cooney, 2009).

Corporate social responsibility (CSR) is an integral part of sustainability which means an awareness that contains economic, social, and ethical responsibilities of organizations in enhancing corporate governance (Blaga, 2013).Consequently, CIPD (2012) mentioned that there are three basic indicators of organizational sustainability which include economic or financial sustainability, social sustainability, and environmental sustainability. Economic sustainability entails the ability of organization to reduce waste of resources, input prices, energy consumption, and disposal. It is operationally related to recycling raw materials and open opportunities for green markets. Although, the finance aspect comprises profitability, market share, and return on investment (ROI). Environmental sustainability is related to businesses operation that preserves and protects people or environment from the use of hazardous inputs and pollution. Social sustainability or performance is the degree to which an organization contributes to society by providing health benefit, green technology, power supply, and scholarship. Huo et al.(2019)claimed that enhancing the corporation's image through the use of corporate social responsibility affects the sustainability of the universities.

The researcher applied stakeholder theory in this study. Freeman (1984) insisted that a stakeholder theory requires organization to provide support with value to stakeholders. Organization is formed to serve the stakeholders not only the investors. The stakeholders includecustomers, suppliers, employees, government, and host communities. This theory stipulates that organizations that adopt green resources by doing the right things that offer satisfaction to stakeholders are capable of achieving economic and social sustainability.Similarly, the priority of the theory is considering the needs of all parties with a vested interest in a particular project. Applying green recruitment initiative by engaging competent employees could attract sustainable development to universities and the entire society. If the Management of Universities imbibes the culture of green behaviour it may operate in a stewardship capacity thereby protecting the institution and the environment.

Empirical Review

Mandip (2012) investigated green human resource management: People management commitment to environmental sustainability. The researcher used survey design and spearman rank correlation to analyze the data. Purposive sampling technique was adopted for the study. The findings revealed that green human resource management has a positive significant relationship with organizational sustainability. It was recommended that organizations should create awareness on green resource management to attract staff cooperation and sustainability. This current research is connected with the previous study in Mandip (2012) in terms of research design, sampling method, and statistical tools.

DailyandHuang (2001) conducted a study on achieving sustainability through attention to human resource factors in environmental management. The researcher applied primary and secondary sources for data collection. Stratified sampling was employed, descriptive statistics, and spearman rank correlation were utilized for data analysis. Findings from the study indicated that sustainability is driven by green resources initiative or environmental management. The investigators recommended that human resource (HR) factors like training, employee empowerment, top management support, teamwork, and rewards systems are main components for the achievement of sustainability goals in the organizations. The existing study is related to the previous study in Daily and Huang (2001) through data analysis and sources of data.

Donohuea et al. (2016) in their study investigated the moderating effect of green human resource management on the association between proactive environmental management and financial performance in small firms. The researcher collected data from a sample of 158 small firms in the Australian machinery and equipment manufacturing sector. The findings indicated that green human resource management GHRM) positively moderates the association between proactive environmental management and financial performance, such that a high level of

green human resource management increases the financial benefits of the organization. The existing study is linked to the previous study in Donohuea et al. (2016) by virtue of data analysis and research design.

Cheema et al. (2015) examined green human resource practices, implementation and hurdles in SME's in Pakistan. They used 5-point Likert scale from the sample size of 140 employees selected from 42 SME's. After the distribution of questionnaire 132 useable responses were received. Findings indicate that Green HR practices are influenced by several factors such as age, experience, and gender. These factors have significant effect on employee performance in the sample to adopt green human-resource practices. Finally, the results reveal a strong, positive and significant association between overall green HRM practices and employee's performance. The existing study is associated with the previous study in Cheema et al. (2015) through research instrument.

Methodology

Research Design

The researcher utilized survey design to ensure that valuable information was received from the participants. This research design enhances business decision and helps individuals to collect and analyze data. Purposive sampling technique was exploited from the independent judgment of the participants and researcher. Primary data of the study were collected from the structured questionnaire and the secondary data received from federal ministry of education report 2020.

Population and Sample of the Study

Population of this study contains 550 selected employees within the level of directors, and administrative staff working in ten federal universities, Nigeria. Meanwhile, this information was extracted from federal ministry of education report 2023. The selected employees in the universities were for convenience and accessibility. Taro Yamane's formula was applied to determine the sample size, which were232 participants. Bowley's proportional allocation formula was adopted to distribute the questionnaire to employees in selected federal universities in Nigeria. The respondent populations chosen from the universities are:

Table 1

Participant Population

	Names of Federal Universities	Directors	Administrative Staff	Number of Employees
1	University of Lagos	27	52	79
2	Ahmadu Bello University, Zaria	22	43	65
3	University of calabar	20	40	60
4	University of Uyo,	10	36	46
5	University of Port Harcourt	18	51	69
6	Federal University, Otuoke, Bayelsa	8	32	40
7	Nnamdi Azikiwe University, Awka	10	33	43
8	University of Benin	13	34	47
9	University of Ibadan Federal University of Technology Owerri	18	44	62
10		9	30	39
	TOTAL			**550**

Source: *Federal Ministry of Education Report, 2023.*

Sample Size Determination

Taro Yamen's formula:

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

Where:

n= Sample size

N= Population size

e= level of significant (0.05)

$$n = \frac{550}{1 + 550(0.05)^2}$$

$$= \frac{550}{1+1.375}$$

$$= \frac{550}{2.375}$$

$$n = 232$$

The sample size for the study was 232 employees. Consequently, Bowley statistical formula was used to determine the number of units allocated to each level of employees in the selected federal universities, Nigeria.

$$Nh = \frac{nNh}{N}$$

Where:

$n =$ sample size

$Nh =$ Number of units allocated to each level of employees in organization.

$N =$ Population size

Table 2
Sample Distribution

Level of Employees	No of Employees	Number of Units Allocated	Sample Size
Directors	155	65.4	65
Administrative staff	395	166.6	167
Total	**550**		**232**

Source*: Field Survey, 2023.*

Table2 indicated the sample size of each level of employees like directors and administrative staff from the selected universities. Hence, the sample size was 232 and 65 was allocated to directors. Administrative staff received 167 units.

Instrument for Data Collection

Research instrument used for collection of data was designed as green resources initiative questionnaire. The questionnaire was structured on green resources initiative and sustainability (Raharjo, 2018).Two hundred and thirty two (232) copies of questionnaire were validly returned by the respondent. Four variables were exploited as the measures of green resources which include green change, green culture, green policy, and green recruitment. The researcher used nominal and 4-point Likert scale to measure the items in green resources initiative which is stated as: 4 = strongly agree (SA), 3 = agree (A), 2 = disagree (D), 1 = strongly disagree (SD).The structured questionnaire was applied for the purpose of collecting relevant data used in answering research questions. In this study, the questionnaire was characterized into three sections namely part A, B, and C. Thus, Section A is about demographic profile of the participants. The section B represents independent variable and section C includes the dependent variable under study.

Validity and Reliability of Instrument

Validity of the research instrument was realized through contributions of the experts in management who made corrections that were used to modify the survey instrument. Content and face validity was used in determining the validity of the research. Reliability of the instrument was determined through a pilot study that

measured the questionnaire adequately with the aid of cronbach alpha. The reliability of the instrument was established using Cronbach Alpha. Items that have an alpha value of 0.7 and above were adequate and reliable.

Table 3

Cronbach Test

	Variable	**Reliability**	**Number of Items**
Green Resources Initiative	Green change	.795	4
	Green culture	.818	4
	Green policy	.851	4
	Green recruitment	.893	4
Sustainability	Economic sustainability	.778	4

Source: Field Survey, 2023

Method of Data Analysis

The statistical tools used to analyze the data include spearman rank correlation and descriptive statistics which are illustrated through the aid of statistical package for social sciences (SPSS). Ethical considerations regarding this study are the researcher notified the selected universities before questionnaire was distributed and participant's identity was kept secret.

Results and Discussion

Analysis of Research Questions

Research question one: To what extent is the relationship between green change and sustainability of federal universities in Nigeria?

Table 4
Mean Score of Respondents on Green Change

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Green change improves behaviour of employees in the organization.	232	1	4	4.25	1.045
Change creates prosperity and satisfaction among staff in the university.	232	1	4	4.32	.815
Change occurs when there is transformation in roles, strategy, and structures in the university.	232	1	4	4.46	.798
This university needs green change like modern infrastructures and compulsory entrepreneurial skills for all students.	232	1	4	4.57	.739
Valid N (listwise)	232				

Table 4described the mean score of respondents on green change as a measure of green resources initiative. The grand mean score was4.4 this means that majority of the employees in federal universities in Nigeria agreed that green change improves behaviour and creates prosperity in the organization.

Research question two: To what extent is the relationship between green culture and sustainability of federal universities in Nigeria?

Table 5
Mean Score of Respondents on Green Culture

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Culture encourages recycling of product to boost sustainability in the organization.	232	1	4	4.11	1.013
Implementing the culture of managing gresources helps to sustain universities.	232	1	4	4.23	.802
The availability of the green culture or artifacts motivates employees to express commitment and attain sustainability.	232	1	4	4.31	.727
Employees in the university are comfortable with a green culture that involves maintenance of facilities and promoting goals.	232	1	4	4.42	.751
Valid N (listwise)	232				

The results in Table 5 presented the mean score analysis of respondents on green culture. The findings showed that the grand mean score was4.3 which indicated that most of the employees in federal universities in Nigeria agreed that green culture promotes recycling of products and the implementation of managing resources sustains universities.

Research question three: To what extent is the relationship between green policy and sustainability of federal universities in Nigeria?

Table 6
Mean Score of Respondents on Green Policy
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Employees are happy when the policy of the university is human oriented.	232	1	4	4.22	1.016
Adequate policy protects the organization from legal risks.	232	1	4	4.34	.822
Policy is used as reference in handling controversial issues that affect employees.	232	1	4	4.51	.708
. Universities have specific policies on travel budgets, award of degree results, and annual appraisal.	232	1	4	4.62	.743
Valid N (listwise)	232				

The results in Table 6clarified the mean score analysis of respondents on green policy. The findings demonstrated that the grand mean score was4.4 which disclosed most of the employees in federal universities, Nigeria agreed that employees are happy when the policy is human oriented and adequate policy protects the organization from legal risks.

Research question four: To what extent is the relationship between green recruitment and sustainability of federal universities in Nigeria?

Table 7
Mean Score of Respondents on Green Recruitment
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Employing right candidates lead to innovation in organization.	232	1	4	4.16	1.024
Employees with required skills improve job performance and sustainability.	232	1	4	4.18	.804
Green recruitment enables the organization to engage intelligent and sensitive employees.	232	1	4	4.22	.733
Employing green lecturers assist the university to achieve excellence and sustainable performance.	232	1	4	4.36	.749
Valid N (listwise)	232				

The Table 7 disclosed the mean score analysis of respondents on green recruitment. This result affirmed that the grand mean score was 4.2 which also revealed the response of the employees in federal universities, Nigeria who agreed that employing right candidates creates innovation and sustainability in organization

Test of Hypotheses

Ho1: There is no significant relationship between green change and sustainability of federal universities in Nigeria.

HA1: There is significant relationship betweengreen change and sustainability of federal universities in Nigeria.

Table 8
Spearman Rank Correlation of Green Change and Sustainability
Correlations

			Greenchange	Sustainability
Spearman's rho	Greenchange	Correlation Coefficient	1.000	.957**
		Sig. (2-tailed)	.	.000
		N	232	232
	Sustainability	Correlation Coefficient	.957**	1.000
		Sig. (2-tailed)	.000	.
		N	232	232

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 8 showed that the correlation or relationship coefficient (*r*-value) was.957 and the *p*-value listed as .000 which means the result is statistically significant different. It also indicated that there was significant positive relationship between green change and sustainability. When the *p*-value proved .000 which was less than .005 the null hypothesis is rejected and alternative hypothesis accepted. Furthermore, this result demonstrated that a green change influences 95.7% sustainability performance in the federal universities, Nigeria.

Ho2: There is no significant relationship between green culture and sustainability of federal universities in Nigeria.

HA2: There is significant relationship betweengreen culture and sustainability of federal universities in Nigeria.

Table 9

Spearman Rank Correlation of Green Culture and Sustainability

Correlations

			Greenculture	**Sustainability**
Spearman's rho	Greenculture	Correlation Coefficient	1.000	.854**
		Sig. (2-tailed)	.	.000
		N	232	232
	Sustainability	Correlation Coefficient	.854**	1.000
		Sig. (2-tailed)	.000	.
		N	232	232

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 9illustrated the correlation coefficient (*r*-value) as.854and the *p*-value proved .000 which means the result is statistically significant different. It also specified that there was significant positive relationship between green culture and sustainability. If the *p*-value is .000 which is less than .005 the null hypothesis becomes rejected and alternative hypothesis accepted. Consequently, this result revealed that green culture determines 85.4% sustainability in the federal universities.

Ho3: There is no significant relationship between green policy and sustainability of federal universities in Nigeria.

HA3: There is significant relationship betweengreen policy and sustainability of federal universities in Nigeria.

Table 10
Spearman Rank Correlation of Green Policyand Sustainability

Correlations

			Greenpolicy	Sustainability
Spearman's rho	Greenpolicy	Correlation Coefficient	1.000	.872**
		Sig. (2-tailed)	.	.000
		N	232	232
	Sustainability	Correlation Coefficient	.872**	1.000
		Sig. (2-tailed)	.000	.
		N	232	232

**. Correlation is significant at the 0.01 level (2-tailed).

The findings in Table 10 indicated high correlation coefficient *r*-value as.872 and the *p*-value as .000 which means the result is statistically significant different. It also postulated that there was significant positive relationship between green policy and sustainability. Where the P-value is .000 which is less than .005 the null hypothesis is rejected and alternative hypothesis accepted. This result attested that green policy contributes to 87.2% sustainability in the federal universities.

Ho4: There is no significant relationship between green recruitment and sustainability of federal universities in Nigeria.

HA4: There is significant relationship betweengreen recruitment and sustainability of federal universities in Nigeria.

Table 11
Spearman Rank Correlation of Green Recruitment and Sustainability

Correlations

			Green recruitment	Sustainability
Spearman's rho	Green recruitment	Correlation Coefficient	1.000	.792**
		Sig. (2-tailed)	.	.000
		N	232	232
	Sustainability	Correlation Coefficient	.792**	1.000
		Sig. (2-tailed)	.000	.
		N	232	232

***. Correlation is significant at the 0.01 level (2-tailed).*

The findings in Table 11signified a high correlation coefficient *r*-value) as.792and the *p*-value, .000 which disclosed that the result is statistically significant different.

It also suggested that there was significant positive relationship between green recruitment and sustainability. Where the *p*-value proved .000 which is less than .005 the null hypothesis is rejected and alternative hypothesis accepted. This result indicated that green recruitment affects 79.2% of sustainability in the federal universities.

Discussion of Findings

The findings in the first hypothesis show that there is positive significant relationship between green change and sustainability of Federal Universities in Nigeria. This implies that employees acknowledge that change improves work attitude and fosters progress in the organizations. This finding is consistent with Luketa (2012) who narrated that green change is the real change that improves the behaviour of employees and creates prosperity in the organization. Hypothesis two findings indicate a positive significant relationship between green culture and sustainability of Federal Universities in Nigeria. This result reveals that culture encourages recycling of products. The output is in line with Guerci & Carollo (2016) who stated that employees work attitudes involve imbibing the culture maintenance, recycling, reusing, and utilizing every natural resource at their disposal for the sustenance of the organization. The findings from the third hypothesis prove that green policy has positive significant relationship with sustainability of Federal Universities in Nigeria. This shows that employees express commitment when the organizational policies are human oriented. Lee (2009) concurred with this result by adding that green policy protects the business from legal risk and guarantees the company proactive success which facilitates sustainable human capital development. The results from fourth hypothesis show that there is positive significant relationship between green recruitment and sustainability of Federal Universities in Nigeria. This suggests that employing the right persons lead to innovation in the organization. This finding is in accordance with Shukla (2012) who demonstrated that is important for organizations to employ candidates who have skills and green resources orientation as part of their core mission to achieve innovation and environmental sustainability.

Conclusions

Organizations that adopt a sustainability culture could contribute to a better society. Green resources appear to be part of the revolutionary movement that the utility promotes sustainability in business. Going green also plays useful role in encouraging the employee to implement preservation of natural resources, maintenance of infrastructures, and recycling. Thus, the findings from this study disclosed that the four measures of green resources namelygreen change, green culture, green policy, and green recruitment have positive significant relationship with sustainability of federal universities in Nigeria. Indeed, the study concluded that green resources predict sustainability and there is positive significant relationship between green resources and sustainability of federal universities in Nigeria.

Recommendations

1. Federal universities should embrace green change that can transform the institution to a greater level of sustainability. Change initiative will raise standards, enhances administrative processes, and minimizes unnecessary wastage of resources, as well as frightening the bottleneck in bureaucracy. Management of universities should implement strategic change that can attract innovation and benefit to students, staff, and the environment.

2. Federal universities in Nigeria should imbibe the culture of learning new things and practice the green culture of recycling of waste and maintenance of infrastructures or facilities. All tertiary institutions should go green by having green buildings with modern facilities to sustain modern education.

3. There should be periodic review of policies to comply with global best practices. Universities should use software to compute and preserve all degree results so that the results can be accessed by people outside the country.

4. Organizations should assimilate green recruitment by employing competent employees that can put the principles of green resources into action. Recruitment based on green projects promotes team work, feedback, productivity, sustainability, and economic growth.

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