Green human resource management and employee engagement in Nigeria-German chemical, Ota, Ogun state, Nigeria

Gestão de recursos humanos verdes e engajamento de funcionários na Química Nigeria-German, Ota, estado de Ogun, Nigéria

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Abstract: *The study explores the relationship between green HRM practices and employee engagement in Nigeria-German Chemicals Plc, Ota, Ogun State, Nigeria. The study adopted a descriptive research design. The study involved a population of 407 employees across various departments in Nigeria-German Chemicals Plc. A sample size of 202 was determined using the Taro Yamane formula, ensuring proportional representation from each division. Data were collected using a structured questionnaire with responses measured on a five-point Likert scale. Pearson's correlation analysis was then employed to assess the strength and direction of the relationships between variables. The findings revealed a positive correlation between green training and development (r = 0.760, p < 0.01) and employee engagement. Similarly, a strong correlation was observed for green employee participation (r = 0.711, p < 0.01). Also, there was a positive correlation between green performance appraisal and employee engagement (r = 0.514, p < 0.01). Lastly, green pay and rewards also demonstrated a strong positive correlation (r = 0.647, p < 0.01). The study concluded that green HRM practices significantly enhance employee engagement within Nigeria-German Chemicals Plc. The study recommended that Nigeria-German Chemicals Plc should integrate green HRM practices into their overall strategy to improve both environmental sustainability and employee motivation.*

Keywords: *Green Human Resource Management, Training, Employee Participation, Performance Appraisals Pay and Rewards, Employee Engagement.*

Resumo: *O estudo explora a relação entre práticas verdes de HRM e engajamento de funcionários na química Nigeria-German, Ota, Estado de Ogun, Nigéria. O estudo adotou um desenho de pesquisa descritivo. O estudo envolveu uma população de 407 funcionários em vários departamentos na*

química Nigeria-German. *Um tamanho de amostra de 202 foi determinado usando a fórmula de Taro Yamane, garantindo representação proporcional de cada divisão. Os dados foram coletados usando um questionário estruturado com respostas medidas em uma escala Likert de cinco pontos. A análise de correlação de Pearson foi então empregada para avaliar a força e a direção das relações entre as variáveis. As descobertas revelaram uma correlação positiva entre treinamento e desenvolvimento verdes (r = 0,760, p < 0,01) e engajamento de funcionários. Da mesma forma, uma forte correlação foi observada para a participação de funcionários verdes (r = 0,711, p < 0,01). Além disso, houve uma correlação positiva entre avaliação de desempenho verde e engajamento de funcionários (r = 0,514, p < 0,01). Por fim, a remuneração e as recompensas verdes também demonstraram uma forte correlação positiva (r = 0,647, p < 0,01). O estudo concluiu que as práticas de HRM verde aumentam significativamente o engajamento dos funcionários na química Nigeria-German. O estudo recomendou que a química Nigeria-German integrasse práticas de HRM verde em sua estratégia geral para melhorar tanto a sustentabilidade ambiental quanto a motivação dos funcionários.*

Palavras-Chave: *Gestão de Recursos Humanos Verde, Treinamento, Participação dos Funcionários, Avaliações de Desempenho, Remuneração e Recompensas, Engajamento dos Funcionários.*

1. Introduction

Employee engagement has emerged as a crucial focus for organisations globally, recognized as a significant driver of organisational success and sustainability. Ashraf and Anam (2015) noted that the concept of employee engagement has expanded to include elements of sustainability and environmental awareness, reflecting the increasing global emphasis on corporate social responsibility and sustainable business practices. According to Gallup (2021), highly engaged business units achieve 21% higher profitability, underscoring the financial benefits of engagement. Moreover, a Gallup (2023) poll indicated that 33% of employees are engaged, while 17% are actively disengaged. Although the current engagement rate surpasses the 26% recorded in 2000, it has decreased from the peak of 36% in 2020, illustrating fluctuating engagement trends over the years.

Vakira et al. (2023) emphasise that employee engagement signifies the emotional commitment employees have to their organisation and its objectives, which leads to improved productivity, innovation, and overall performance. This engagement is defined by employees' emotional and intellectual dedication to their work and organisation (Scharp et al., 2022). Engaged employees are more likely to experience higher job satisfaction, organisational commitment, and contribute positively to environmental performance (Kuzior et al., 2022). Given the substantial environmental impact of organisations, there is increasing pressure to adopt sustainable practices. Consequently, green human resource management (GHRM) has emerged as a strategic approach to align HR practices with environmental sustainability objectives.

Since the 1990s, the focus on environmental management has catalysed the "go green" movement. This shift has led organisations to implement various green initiatives, including green marketing, green banking, green management, and green HRM, to enhance their environmental sustainability (Suriyankietkaew et al. 2022). Globally, both developed and developing nations face increasing pressure to adopt sustainable and eco-friendly management practices (Pham et al. 2019). HRM is pivotal in embedding sustainability within organisations (Yusliza et al., 2017). Concerns related to environmental management have been integrated into broader HRM models and frameworks (Jackson et al., 2014), leading to the emergence of green HRM, which aligns environmental impacts with organisational contexts (Renwick et al. 2013). Developing sustainable organisations necessitates a focus on human and behavioural aspects (Haldorai et al. 2022).

Human resources are the most valuable asset of any organisation, making Human Resource Management (HRM) a crucial aspect of organisational management. Sustainability originates from employee behaviours and HRM actions, which underscores the importance of Green HRM.

According to Ahmed (2015), Green HRM promotes the economic and social well-being of both the organisation and its employees while raising awareness about environmental protection and sustainability. Khrushch and Karpiuk (2021) noted that ecological consciousness is essential in both personal and professional contexts because our daily activities impact the environment and our future. Consequently, adopting sustainable living habits is imperative.

Numerous studies have investigated the impact of green HRM practices: such as green recruitment, performance management, training, rewards, and employee involvement on organisational environmental performance (Longoni et al., 2018; Roscoe et al., 2019). Recent studies have begun exploring the relationship between GHRM and employee engagement. For instance, Arulrajah (2016) demonstrated that these practices enhance employees' commitment to environmental initiatives. However, these studies failed to examine the relationship between green HRM practices and employee's engagement within the Nigeria manufacturing context and specificfically in Nigeria-German Chemical in Ota, Ogun State, Nigeria.

Building on the aforementioned insights, this study aims to explore the relationship between green HRM and employee engagement, particularly how the adoption of GHRM practices influences employee engagement. Thus, exploring how Green HRM practices (green training and development, green employee participation, green performance appraisals and green pay and rewards) influence employee engagement especially in Nigeria Manufacturing Sector offers valuable insights into the broader potential of eco-friendly HR strategies. As a result, the present study explores green human resources management (GHRM) and employee engagement in Nigeria-German Chemical in Ota, Ogun State, Nigeria.

2. Literature review

2.1 Green Human Resource Management

Green human resource management (HRM) is widely implemented in contemporary organisational practices worldwide. Green HRM involves implementing solutions that include candidates' environmental ideals into the recruitment and selection processes. According to the HRM behavioural literature, the influence of Green HRM on employee workplace behaviours is influenced by individual social and psychological processes, as suggested by Yusliza et al. (2017). Arulrajah (2016) define green HRM as a set of practices that include assessing candidates' environmental values during recruitment, offering training in environmental skills, incorporating green behaviour into employee promotion criteria and capability assessments, and aligning employees' roles with green-related objectives. These practices have the dual purpose of promoting environmentally responsible behaviours among employees and improving the sustainability efforts of the organisation. Dumont et al. (2017) stated that by incorporating environmental concerns into HRM practices, organisations aim to create a culture where environmental responsibility is seamlessly integrated into daily operations and strategic objectives. This, in turn, promotes a sustainable organisational culture and improves competitiveness in the global marketplace.

Recently, numerous organisations have shown an increasing recognition of environmental sustainability by adopting diverse environmental management strategies (Jabbour & De-Sousa, 2016). With the growing globalisation of the corporate sector, there is a clear transition from traditional financial frameworks to a modern capacity-based economy that prioritises the exploration of environmentally friendly economic aspects (Ahmed, 2015). The increased global emphasis on environmental stewardship has led organisations to implement new methods in order to achieve higher performance levels (Jabbar & Abid, 2015). Some organisations have adopted new strategies and implemented green HRM policies to take advantage of the environmental benefits, acknowledging that certain organisational practices can have a negative influence on environmental performance. These measures ensure that organisational aims are in line with environmental norms, promoting innovation and efficiency. According to Kim et al. (2017), organisations aspire to improve

their environmental impacts and increase operational effectiveness and competitiveness in a sustainability-focused global market by incorporating green HRM practices. This strategic linkage not only facilitates the achievement of environmental goals but also enhances the overall dedication to corporate social responsibility and the implementation of sustainable business practices

2.2 Employee Engagement

Engagement, first derived from burnout research, was defined by Fairlie (2017) as a means to investigate employee well-being outside the realm of negative factors. Engaged employees, in contrast to those suffering from burnout, demonstrate a high level of competence, vitality, and commitment to their work, which empowers them to successfully complete their assignments. The latest research by Knight et al. (2020) provides further clarification and analysis of employee engagement, emphasising its complex and multifaceted nature. The ongoing discussion demonstrates the changing comprehension of how involvement influences the well-being of employees and the performance of organisations. It highlights the significance of creating a stimulating work environment to improve productivity and satisfaction (Bakker & Albrecht, 2018).

Kahn (1990) provided a more detailed explanation that personal engagement involves the simultaneous use and demonstration of a person's ideal self in behaviours that foster ties to work and people, as well as active and complete role performances. This includes physical, cognitive, and emotional presence. These circumstances collectively create a work atmosphere that promotes a sense of worth, safety, and motivation among employees, leading to a high degree of involvement that is advantageous for both the individual and the organisation. Kahn's approach offers a fundamental comprehension of how psychological elements impact employee engagement, underscoring the significance of establishing meaningful, secure, and supportive work environments. Engaged employees are those that actively participate in their duties, demonstrate mental acuity and focus, and establish emotional connections with their work and colleagues. Engagement, essentially, refers to the degree to which employees are mentally and emotionally present while carrying out their job responsibilities.

2.3 Green Human Resources Management and Employee Engagement

Green HRM is essential for shaping and influencing employee attitudes, knowledge, and motivation towards sustainability-related behaviours in organisations. It is crucial to motivate employees to synchronise their actions with the environmental objectives of the organisation in order to successfully implement and comply with green policies. Renwick et al. (2013) argue that implementing green HRM practices is crucial for promoting environmentally conscious behaviour among employees in the workplace. Several work positions require strict compliance with organisational environmentally-friendly standards, including the prevention of toxic waste dumping into nearby water systems (Dumont et al., 2017). These measures not only guarantee adherence to environmental rules but also foster a culture of environmental responsibility among employees.

Jabbar and Abid (2015) found that implementing green HRM practices and involving employees in green projects had a considerable positive impact on employee behaviour in the workplace. Implementing green HRM not only helps organisations reduce expenses but also allows them to invest in resources that have a beneficial impact on employee behaviour. Companies that adopt strong green HRM practices generally see benefits such as increased visibility, staff commitment, customer loyalty, and trust from suppliers and investors. In order to have a good impact on employee behaviour, green HRM practices include a range of methods such as green recruitment, green training and development, performance management, assessment, remuneration, pay and rewards, and employment relations (Mousa & Othman, 2020). The purpose of these practices is to promote ecological literacy among employees, hence enhancing their behaviour inside the organisation. The implementation of green rewards and pay system, as proposed by Gomes et al. (2023), organisations can motivate their staff to regularly participate in ecologically friendly behaviours in the workplace. Furthermore, the inclusion of employees in the decision-making

processes and tasks associated with environmentally friendly initiatives, as suggested by Jabbar and Abid (2015), cultivates a feeling of ownership and accountability, resulting in favourable alterations in employee conduct.

2.4 Theoretical Framework: Social Exchange Theory

Social Exchange Theory (SET) is a fundamental principle in social psychology and organisational behaviour that elucidates human interactions and relationships by considering reciprocal transactions. Sociologist George Homans first formulated the thesis in the 1950s, building upon earlier economic and psychological theories. Chang et al. (2015) proposes that according to social transaction Theory (SET), relationships progress over time to become trusting, loyal, and mutually committed, as long as the individuals involved view the transaction as fair and advantageous. This theory posits that individuals participate in social transactions with the aim of acquiring advantages or evading drawbacks. These advantages and disadvantages are assessed by considering the costs and rewards involved. The essential elements of SET comprise reciprocity, trust, commitment, and perceived fairness. Cropanzano et al. (2017) stated that reciprocity refers to the mutual exchange of advantages, trust is the belief in the other party's intentions, commitment is the devotion to the connection, and perceived fairness entails evaluating whether the trade is equitable.

The present study utilises the Social Exchange Theory (SET) to comprehensively analyse how employees react to their organisation's environmental initiatives. Malik et al. (2021) found that organisations that actively promote and implement green HRM practices, such as reducing their carbon footprint, promoting recycling, or encouraging sustainable behaviours, are perceived by employees as being committed to broader societal goals. Ababneh (2021) found that this view can create a feeling of duty among employees to respond with increased involvement, loyalty, and participation in green activities. According to Mishra (2017), when an organisation successfully implements green HRM strategies such as rewarding employees who adopt environmentally friendly habits or providing sustainability training, employees are likely to feel appreciated and assisted. Moreover, Jerónimo et al. (2020) asserted that this sense of organisational support might result in favourable attitudes, such as heightened job contentment, dedication to the organisation, and active engagement in environmentally-friendly endeavours. According to Afsar et al. (2018), employees have the potential to become more involved in their work, actively contribute to environmental objectives, and serve as advocates for the organisation's sustainability initiatives.
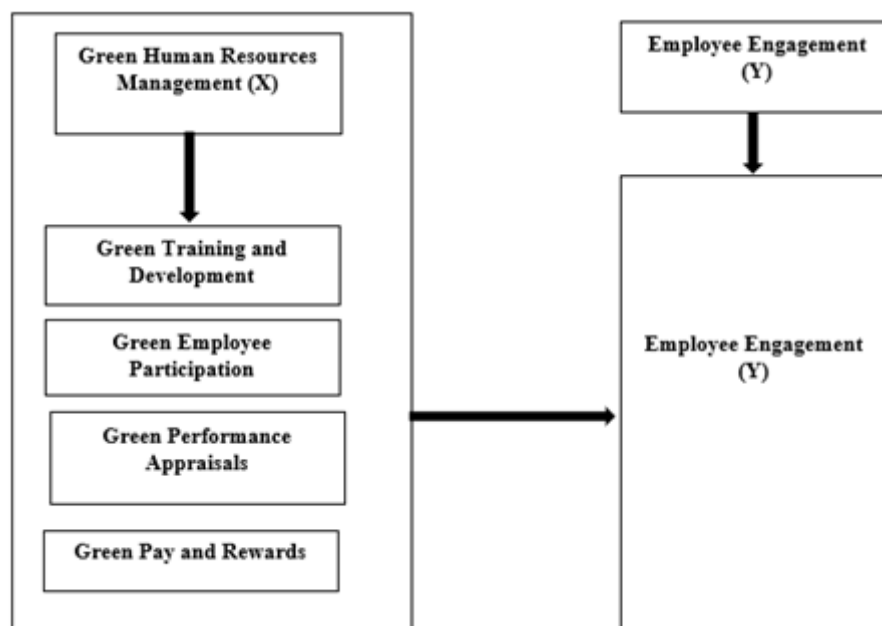

Figure 1: Conceptual Framework of the Study
Source: Author's Design, 2024

3. Methodology

This study utilised a descriptive research design, which is well-suited for comprehending and investigating phenomena in their environments. The use of descriptive design in this context was acceptable as it enables a comprehensive and methodical depiction. The research population consisted of all 407 workers of Nigerian-German Chemicals Plc (NGC). NGC is a leading producer and supplier of drinks and medicines in Nigeria. Founded in 1964 as Hoechst Nigeria Limited, the company has evolved into a prominent participant in its sector. The sample size was obtained using the Taro Yamane formula, which is a reliable method for estimating sample sizes from a population with a known size. The formula is given by Eq.(1).

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

(1)

where:

n= sample size;

N=Population of the study;

e= margin of error.

Therefore, the sample size for the study was 202.

A structured questionnaire served as the primary research instrument. This choice was justified by the need to systematically gather quantitative data from a large sample, ensuring consistency and reliability in responses. The questionnaire was divided into three sections: Section A collected socio-demographic data, including age, gender, education level, and years of service, helping to contextualize respondents' profiles and identify trends affecting Green HRM and employee engagement. Section B focused on Green HRM practices, covering variables like Green Recruitment, Training, Performance Appraisals, Rewards, and Employee Participation, which are key to employee engagement. Section C assessed employee engagement, particularly in relation to green initiatives.

A five-point Likert scale was used for all questions, allowing respondents to express varying levels of agreement. Construct validity was assessed by correlating the questionnaire with established theories. For reliability, internal consistency was measured using Cronbach's alpha, with values above 0.70 indicating satisfactory reliability (Tabber, 2018). The review of questions improved clarity and consistency. The reliability scales and Cronbach's alpha values for each construct were all deemed acceptable at 0.78 Cronbach's alpha formula. The potential biases in the study include response bias and sampling bias. Response bias may arise if participants provide socially desirable answers, especially on topics like green initiatives, rather than their true opinions. Sampling bias may occur due to the specific population focus, which could limit the generalizability of the findings to broader contexts.

This study used primary data, collected through an online survey via Google Forms, to assess the impact of Green HRM practices on employee engagement at Nigerian-German Chemicals Plc. Primary data allows for a more accurate representation of the organization (Hair et al. 2019). Data were gathered using google forms. Responses were automatically compiled into an Excel spreadsheet for easy analysis (Bensfiya et al., 2023). This method ensured effective and organized data collection. Out of 202 questionnaires distributed, 164 were returned, giving a response rate of 81.18%. This high level of participation enhances the credibility of the findings, ensuring that they are reflective of the broader workforce at NGC.

This study used correlation analysis to explore the relationship between green HRM practices and employee engagement, specifically focusing on green training, employee participation, performance appraisals, and rewards. Correlation analysis helps determine the strength and direction of these relationships, offering insights into how green HRM strategies impact engagement. Statistical significance was assessed with a p-value of < 0.05 to ensure the findings were robust and reliable.

4. Results

Table 1 presents the socio-demographic details of the respondents. It revealed that out of the 164 participants, 91 were male (55.5%) and 73 were female (44.5%), showing a fairly balanced gender representation, with men making up a slightly larger portion. In terms of age, most respondents (46.3%) were between 20-24 years old, indicating a young workforce. The next significant group fell within the 25-29 age bracket (26.2%), while 30-34 years accounted for 18.9%. A smaller number of respondents were aged between 35-39 years (3.0%), 40-44 years (4.3%), and 45 years and above (1.2%). This points to a predominantly youthful workforce, with most employees still early in their careers.

Table 1: Socio-demographic characteristics of respondents

Socio-Demographics	Variables	Frequency	Percentage
Gender	Male	91	55.5%
	Female	73	44.5%
Age	20-24 years	76	46.3%
	25-29 years	43	26.2%
	30-34 years	31	18.9%
	35-39 years	5	3.0%
	40-44 years	7	4.3%
	45 years and above	2	1.2%
Marital Status	Single	113	68.9%
	Married	36	22.0%
	Divorced	3	1.8%
	Separated	8	4.9%
	Widow/Widower	4	2.4%
Highest Educational Qualification	OND/Diploma/NCE	74	45.1%
	HND/First Degree	49	29.9%
	Post graduate Diploma	38	23.2%
	MSc/MEd/MA	3	1.8%
	PhD	0	0.0%
Work Experience	0-4 yrs.	79	48.2%
	5-9 yrs.	47	28.7%
	10-14 yrs.	19	11.6%
	15-19 yrs.	7	4.3%
	20yrs and above	12	7.3%
Total		**164**	**100.0%**

Source: Researcher's Field Results (2024)

Regarding marital status, the majority were single (68.9%), with 22.0% married. Smaller percentages were divorced (1.8%), separated (4.9%), or widowed (2.4%), suggesting that a significant number of the employees were at earlier life stages or less tied down by familial responsibilities. Educational qualification levels showed that 45.1% of respondents held OND/Diploma/NCE qualifications, making this the largest group. This was followed by 29.9% with HND/First Degrees, and 23.2% with Postgraduate Diplomas. Only 1.8% had a Master's degree, and no respondents held a PhD. This suggests that the workforce is primarily made up of those with mid-level educational qualifications.

Regarding work experience, almost half of the respondents (48.2%) had 0-4 years of experience, while 28.7% had 5-9 years. Smaller groups had 10-14 years (11.6%), 15-19 years (4.3%), and 20 years or more (7.3%) of experience, showing that most of the respondents were in the early stages of their professional careers. These socio-demographic insights provide a clear picture of the workforce composition at Nigeria-German Chemicals Plc, highlighting the prevalence of young, relatively less experienced employees with mid-level educational backgrounds.

4.1 Test of Hypotheses

This section presents the testing of hypotheses to evaluate the relationships between green human resource management practices and employee engagement at Nigeria-German Chemicals Plc (NGC).

Table 2 examines the relationship between green training and development and employee engagement at Nigeria-German Chemicals. The null hypothesis (H_0) states no significant relationship.

H_0: There is no significant relationship between green training and development and employee engagement in Nigeria-German Chemical, Ota, Ogun State.

Table 2: Relationship between green training and development and employee engagement

		Green Training and Development	Employee Engagement
Green Training and Development	Pearson Correlation	1	.760**
	Sig. (2-tailed)		.000
	N	164	164
Employee Engagement	Pearson Correlation	.760**	1
	Sig. (2-tailed)	.000	
	N	164	164

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Researcher's Field Results (2024)

Pearson correlation analysis reveals a strong positive correlation of 0.760, indicating that as green training and development increase, employee engagement rises. The p-value of 0.000, well below the 0.01 threshold, confirms statistical significance, allowing the rejection of the null hypothesis in favour of the alternative. Therefore, a significant relationship exists between green training and development and employee engagement.

Table 3 examines the relationship between green employee participation and employee engagement at Nigeria-German Chemicals. The null hypothesis (H_0) suggests no significant influence.

H_0: Green employee participation has no significant influence on employee engagement in Nigeria-German Chemical, Ota, Ogun State.

Table 3: Relationship between Green Employee Participation and Employee Engagement

		Green Employee Participation	Employee Engagement
Green Employee Participation	Pearson Correlation	1	.711**
	Sig. (2-tailed)		.000
	N	164	164
Employee Engagement	Pearson Correlation	.711**	1
	Sig. (2-tailed)	.000	
	N	164	164

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Researcher's Field Results (2024)

Pearson correlation analysis shows a strong positive correlation of 0.711, indicating that higher green employee participation is linked to greater employee engagement. The p-value of 0.000, below the 0.01 threshold, confirms the statistical significance of the correlation. Thus, the null hypothesis is rejected, and the alternative hypothesis is accepted, indicating that green employee participation significantly influences employee engagement.

Table 4 explores the relationship between green performance appraisals and employee engagement at Nigeria-German Chemicals. The null hypothesis (H$_0$) suggests no significant influence.

H$_0$: Green performance appraisals have no significant influence employee engagement in Nigeria-German Chemical, Ota, Ogun State.

Table 4: Relationship between Green Performance Appraisal and Employee Engagement

		Green Performance Appraisal	Employee Engagement
Green Performance Appraisal	Pearson Correlation	1	.514**
	Sig. (2-tailed)		.000
	N	164	164
Employee Engagement	Pearson Correlation	.514**	1
	Sig. (2-tailed)	.000	
	N	164	164

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Researcher's Field Results (2024)

Pearson correlation analysis shows a moderate positive correlation of 0.514, indicating that improved green performance appraisals are associated with higher employee engagement. The p-value of 0.000, well below the 0.01 threshold, confirms the statistical significance of this relationship. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, showing that green performance appraisals significantly influence employee engagement.

Table 5 examines the relationship between green pay and rewards and employee engagement at Nigeria-German Chemicals. The null hypothesis (H$_0$) suggests no impact, while the alternative hypothesis (H1) proposes a significant effect.

H$_0$: Green pay and rewards have no significant impact employee engagement in Nigeria-German Chemical, Ota, Ogun State.

Table 5: Relationship between Green Pay and Rewards and Employee Engagement

		Green Pay and Rewards	Employee Engagement
Green Pay and Rewards	Pearson Correlation	1	.647**
	Sig. (2-tailed)		.000
	N	164	164
Employee Engagement	Pearson Correlation	.647**	1
	Sig. (2-tailed)	.000	
	N	164	164

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Researcher's Field Results (2024)

Pearson correlation analysis reveals a strong positive correlation of 0.647, indicating that enhanced green pays and rewards are associated with increased employee engagement. The p-value of 0.000, below the 0.01 threshold, confirms statistical significance. Thus, the study rejects the null hypothesis (H0) and accepts the alternative hypothesis, concluding that green pay and rewards significantly impact employee engagement.

5. Discussion of findings

This study explores the relationship between Green Human Resource Management (GHRM) practices and employee engagement at Nigeria-German Chemical in Ota, Ogun State, focusing on four specific objectives: green training and development, green employee participation, green performance appraisals, and green pay and rewards. The findings show a strong positive correlation,

suggesting that improvements in green training programs enhance employee engagement. This aligns with Gomes et al. (2023), who argue that effective GHRM practices, particularly in training, boost staff participation in sustainability goals. Olanipekun (2022) similarly notes that green training enhances environmental awareness and promotes sustainable practices, though Ababneh (2021) highlights the importance of organisational culture in green HRM success.

Also, findings indicate a significant positive relationship, supporting Ullah (2017), who assert that involvement in green initiatives increases employee engagement. However, Renwick et al. (2015) and Raineri and Paill (2016) stress that such participation must be strategically integrated into the organisation to be effective. Further, the results show a positive correlation, indicating that effective green performance appraisals enhance engagement levels. This is supported by Gomes et al. (2023) and Olanipekun (2022), who highlight the importance of green appraisals in fostering employee commitment. However, Singh and Pandey (2020) caution that green performance management may not always predict engagement, depending on the context.

Finally, the study reveals a strong positive correlation, suggesting that enhancing green pay and reward systems increases employee engagement. This is consistent with research by Gupta et al. (2020), which suggests that sustainable compensation and reward systems reinforce commitment to green initiatives. Similarly, Teixeira et al. (2016) argue that aligning pay and rewards with environmental values boosts employee motivation and engagement.

6. Conclusions

This study highlights the significant impact of green human resource management (GHRM) practices on employee engagement at Nigeria-German Chemicals in Ota, Ogun State. By focusing on four specific GHRM practices (green training and development, green employee participation, green performance appraisals, and green pay and rewards), this research underscores the essential role these initiatives play in cultivating a sustainable workplace culture that not only benefits the environment but also enhances employee involvement and satisfaction.

The findings reveal that equipping employees with skills and knowledge related to sustainability through targeted training significantly boosts their engagement levels. Such training initiatives not only enhance employees' competencies but also foster a sense of purpose and commitment to the organisation's sustainability goals. Moreover, the research indicates that active employee participation in environmental initiatives leads to a greater sense of value and connection to the workplace. This suggests that organisations should create inclusive environments that encourage employee input and involvement in sustainability efforts, as this engagement is vital for fostering a dedicated workforce.

In addition, incorporating sustainability metrics into performance evaluations is shown to be relevant for enhancing employee engagement. This practice promotes a culture of accountability and aligns employee performance with the organisation's environmental objectives, thereby supporting overall engagement. Also, recognising and rewarding eco-friendly behaviours proves to be an essential aspect of motivating employees. Financial incentives and acknowledgment of contributions to sustainability reinforce employees' commitment to their roles and the organisation's environmental mission.

Overall, this study demonstrates that effective GHRM practices are crucial for improving employee engagement at Nigeria-German Chemicals. As organisations increasingly prioritise sustainability, integrating these practices into HR strategies will not only enhance employee morale and productivity but also contribute to achieving broader environmental goals. However, while the results are presented clearly, it is important to acknowledge potential limitations of the findings. Contextual factors, such as the specific organisational culture, industry dynamics, and socio-economic conditions in Nigeria, may have influenced the outcomes and could limit the generalisability of the results. Additionally, challenges in implementing GHRM practices, such as

resistance to change, lack of resources, or insufficient management support, could hinder their effectiveness.

Future research should investigate the long-term effects of GHRM practices on employee engagement and organisational performance, considering these limitations. Exploring potential barriers to the successful implementation of GHRM initiatives across different contexts will provide a more nuanced understanding and offer practical insights for organisations aiming to adopt these practices

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

i. Nigeria-German Chemicals should invest in comprehensive green training and development initiatives that equip employees with the knowledge and skills needed to engage in sustainable practices. These programs should be tailored to address specific environmental challenges faced by the organisation and promote a culture of sustainability.

ii. Nigeria-German Chemicals should create opportunities for employees to actively participate in green initiatives. This could involve forming cross-functional green teams, encouraging suggestions for sustainability improvements, or involving employees in decision-making processes related to environmental policies.

iii. Nigeria-German Chemicals should integrate sustainability metrics into their performance appraisal processes. This approach not only motivates employees to engage in eco-friendly practices but also aligns individual performance with the organisation's sustainability objectives, creating a shared commitment to environmental responsibility.

iv. Nigeria-German Chemicals should develop a structured reward and recognition system that acknowledges employees' contributions to sustainability so as to significantly boost engagement. This could include financial incentives, awards, or public recognition for employees who demonstrate exceptional commitment to green practices.

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