EFFECTS OF EMPLOYEES' CLIMATE CHANGE ATTITUDINAL RESPONSES AND ACTION ORIENTATION ON RESOURCE EFFICIENCY AND ECO-FRIENDLY PRACTICES IN MANUFACTURING FIRMS

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ABSTRACT

The manufacturing sector is integral to global economic development but is also a significant contributor to environmental degradation. Addressing climate change requires not only technological advancements but also the active participation of employees. This study investigates the effect of employees' climate change attitudinal responses and action orientation on resource efficiency and eco-friendly practices in manufacturing firms in Lagos State, Nigeria. Utilizing a descriptive research design, data were collected from 923 respondents using structured questionnaires and analyzed with linear regression. The results show that employees' attitudinal responses to climate change significantly influence resource efficiency ($R^2 = 0.187$, $\beta = 0.432$, $p < 0.05$), explaining 18.7% of the variance. Similarly, action orientation towards climate change significantly affects the adoption of eco-friendly practices ($R^2 = 0.105$, $\beta = 0.324$, $p < 0.05$), explaining 10.5% of the variance. Thus, this study concludes by noting the importance of promoting positive environmental attitudes and proactive behaviours among employees to enhance sustainability in manufacturing firms. It, therefore, recommends that manufacturing companies implement comprehensive environmental education programmes. These programmes should focus on raising awareness about climate change, its impacts, and the importance of sustainable practices amongst others.

INTRODUCTION

The manufacturing sector plays a pivotal role in global economic development, yet, it is also one of the most significant contributors to environmental degradation, particularly through greenhouse gas emissions and resource depletion. The urgency to mitigate climate change has prompted many manufacturing firms around the world, and Nigeria in particular, to start adopting resource efficiency and eco-friendly practices (Sanni, 2018; Abatan et al., 2024). However, the success of these initiatives often hinges not only on technological advancements and regulatory compliance but also on the attitudes and actions of employees within these organizations. Employees' attitudinal responses to climate change, encompassing their beliefs, perceptions, and emotional reactions, are crucial determinants of how effectively they engage in and support sustainability initiatives (Ababneh, 2021; Norton et al., 2017). Positive attitudinal responses can promote a culture of environmental stewardship, where employees are more likely to participate in eco-friendly practices and advocate for resource efficiency measures. Conversely, negative attitudes or apathy towards climate change might hinder the implementation of sustainable practices, leading to suboptimal outcomes in terms of resource use and environmental impact.

Action orientation, defined as the degree to which employees are willing and proactive in implementing and supporting eco-friendly initiatives (Stern, 2000), is another critical factor. Action-oriented employees not only comply with established green policies but also innovate and drive new sustainability projects, contributing to a more resource-efficient and environmentally responsible manufacturing process (Batool et al., 2024). This proactive behaviour could be driven by various factors (i.e., organizational culture, leadership support, and individual values and motivations) that must be reinforced continuously and positively to be sustained. The interplay between employees' climate change attitudes and their action orientation can significantly affect the overall environmental performance and sustainable practices of manufacturing firms (Boiral, 2009). Despite the widespread acknowledgment of the need for sustainable practices in the manufacturing sector, there remains a significant gap in understanding the role of employees' attitudes and actions in achieving these goals. Specifically, the problem lies in the insufficient exploration of how employees' attitudes and action orientation towards climate change affect resource efficiency and eco-friendly practices within these manufacturing firms. This gap limits the ability of organizations to fully leverage their human resources in the fight against environmental degradation and climate change.

This study becomes important because it addresses the critical need to understand the human factors influencing the success of sustainability initiatives in manufacturing firms. Through the interrogation of employees' attitudinal responses and action orientation, the study provides valuable insights into how employees' conduct, beliefs, and actions can be harnessed to improve environmental performance via resource efficiency and eco-friendly practices. Therefore, the findings of this study can inform the development of targeted interventions and policies aimed at nurturing a more environmentally conscious workforce. This can lead to more effective and sustainable resource management practices, ultimately contributing to the broader goals of reducing greenhouse gas emissions and conserving natural resources in Nigeria.

LITERATURE REVIEW

Climate change attitudes refer to the beliefs, perceptions, and feelings that individuals hold about climate change and its impacts. These attitudes are shaped by various factors, including personal values, cultural norms, and exposure to information about climate change (Leiserowitz et al., 2006). Positive attitudes toward climate change typically involve recognizing the seriousness of the issue and the necessity for action, while negative or indifferent attitudes might stem from skepticism, misinformation, or lack of awareness (Whitmarsh, 2011). In the context of the workplace, employees' attitudes towards climate change can shape organizational practices and policies. Positive attitudes can promote a culture of sustainability, where employees are motivated to support and engage in resource-efficient and eco-friendly practices (Andersson & Bateman, 2000). On the other hand, negative attitudes can hinder the implementation of environmental initiatives, as employees may resist changes or fail to see the importance of their actions.

Action orientation towards climate change refers to the practical steps and measures taken by individuals to mitigate or adapt to the impacts of climate change. As noted by the Intergovernmental Panel on Climate Change (IPCC) (2014), these actions can range from reducing greenhouse gas emissions and increasing energy efficiency to implementing sustainable practices and supporting environmental policies. The effectiveness of climate change action orientation depends on various factors, including the level of commitment, available resources, and the presence of supportive policies and infrastructure (Dietz et al., 2009). Pro-environmental actions are often driven by a combination of intrinsic and extrinsic motivations. Intrinsic motivations include personal values, moral responsibility, and environmental awareness, while extrinsic motivations involve social norms, economic incentives, and regulatory requirements (Steg & Vlek, 2009). For example, an employee who values environmental sustainability may be intrinsically motivated to reduce waste and conserve energy at work. Simultaneously, extrinsic factors such as organizational policies and incentives for green practices can reinforce these actions (Gifford & Nilsson, 2014; Ahmadov, 2016).

Resource efficiency refers to the sustainable management and use of resources to minimize environmental impact while maximizing economic and social benefits. It involves optimizing the use of materials, energy, water, and other resources throughout the production and consumption processes. Achieving resource efficiency is essential for reducing waste, lowering greenhouse gas emissions, and conserving natural resources, thereby contributing to sustainable development (IPCC, 2014). In the manufacturing sector, resource efficiency can be achieved through various strategies, including the adoption of cleaner production technologies, process optimization, and the implementation of circular economy principles (Ghisellini et al., 2016). Cleaner production involves using less harmful materials and processes, reducing emissions, and improving energy and water efficiency. Process optimization focuses on enhancing production efficiency to reduce waste and resource consumption. Circular economy principles promote the reuse, recycling, and remanufacturing of products to extend their lifecycle and reduce resource extraction (Geissdoerfer et al., 2017). The benefits of resource efficiency extend beyond environmental sustainability to include economic advantages such as cost savings, improved competitiveness, and compliance with environmental regulations (Liu et al., 2023). Companies that invest in resource-efficient practices might experience reduced production costs and enhanced brand reputation. Moreover, resource efficiency can drive innovation, leading to the development of new products and business models that align with sustainability goals.

Eco-friendly practices, also known as green or sustainable practices, involve actions and strategies that minimize environmental harm and promote sustainability. These practices encompass a wide range of activities, including reducing waste, conserving energy and water, using renewable resources, and minimizing pollution (Mostaghimi & Behnamian, 2023). Adopting eco-friendly practices is essential for mitigating the adverse impacts of industrial activities on the environment and contributing to global sustainability efforts. In manufacturing firms, eco-friendly practices can be implemented at various stages of the production process. For instance, using sustainable materials, optimizing energy use, and adopting clean technologies can significantly reduce the environmental footprint of manufacturing operations (Bonini & Oppenheim, 2008; Rozhko, A., & Wiesmeth, 2013). Additionally, practices such as waste segregation, recycling, and efficient water management can help conserve resources and reduce pollution. Implementing these practices requires a commitment to continuous improvement and innovation in environmental management (Aiguobarueghian et al., 2024). The adoption of eco-friendly practices is often driven by a combination of regulatory pressures, market demands, and organizational values (Porter & van der Linde, 1995; Kenis & Lievens, 2016).

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Governments and regulatory bodies play a crucial role by setting environmental standards and providing incentives for sustainable practices. Consumers increasingly prefer products from companies with strong environmental credentials, creating market-driven motivations for adopting eco-friendly practices (Chan, 2024). Furthermore, organizations with a culture that values sustainability are more likely to integrate eco-friendly practices into their operations. Thus, promoting eco-friendly practices in manufacturing firms is vital for achieving environmental sustainability and meeting the growing expectations of stakeholders.

Theoretical Review

The theory of normative conduct, developed by Cialdini et al. (1990) provides a framework for understanding how social norms influence behaviour. This theory posits that behaviour is guided by two types of norms: Descriptive norms and injunctive norms. Descriptive norms refer to perceptions of what is commonly done in a given situation, while injunctive norms involve perceptions of what is socially approved or disapproved (Cialdini et al., 1990). The theory suggests that both types of norms can significantly influence individual and collective actions, particularly in the context of environmental behaviour (Kallgren et al., 2000). Descriptive norms play a crucial role in shaping climate change attitudes by influencing individuals' perceptions of common behaviours within their social or organizational context. For example, if employees observe that their colleagues frequently engage in eco-friendly practices such as recycling or using energy-efficient devices, they are more likely to develop positive attitudes towards these behaviours (Goldstein et al., 2008). This observation aligns with the concept that people tend to conform to what they perceive as typical behaviour, thereby promoting a culture of environmental awareness and sustainability within organizations. Injunctive norms, on the other hand, influence climate change actions by reflecting societal or organizational approval of specific behaviours. When employees perceive that their organization values and rewards eco-friendly actions, such as reducing waste or participating in environmental initiatives, they are more likely to engage in these behaviours to gain social approval and avoid disapproval (Cialdini et al., 1990). This normative influence is crucial for motivating action-oriented responses to climate change and promoting the adoption of sustainable practices within the workplace.

Descriptive norms can affect resource efficiency in manufacturing firms. When employees see that resource-efficient practices are commonly adopted and normalized within their organization, they are more likely to follow suit. For instance, observing colleagues regularly implementing measures to conserve energy, reduce material usage, and recycle can encourage similar behaviours across the organization (Schultz et al., 2007).

This peer influence can lead to the widespread adoption of resource-efficient practices, thereby contributing to overall organizational sustainability. Injunctive norms reinforce eco-friendly practices by highlighting what is considered acceptable and commendable behaviour within an organization. Suppose the organizational culture strongly supports and rewards actions such as waste reduction, pollution control, and the use of renewable resources, employees will feel a stronger obligation to comply with these expectations (Nolan et al., 2008). This normative pressure can drive the consistent implementation of eco-friendly practices, fostering an environment where sustainability is integral to operational processes.

Empirical Review and Hypotheses Development

Extant research has consistently shown that employees' attitudes toward climate change significantly impact resource efficiency within organizations. A study by Shah et al. (2023) revealed that employees with positive environmental attitudes are more likely to engage in behaviours that enhance resource efficiency, such as reducing energy consumption, minimizing waste, and optimizing the use of raw materials. This alignment of personal attitudes with organizational goals can lead to significant improvements in resource utilization and operational efficiency. Equally, Dienes (2016) found that environmental attitudes, shaped by awareness and understanding of climate change, directly influence the adoption of resource-efficient practices. Employees who perceive climate change as a serious threat and believe in the efficacy of mitigation strategies are more likely to support and participate in initiatives aimed at resource conservation. This study highlights the importance of fostering positive climate change attitudes to drive resource efficiency in manufacturing firms. Another study by Palmer et al. (2020) emphasized the role of intrinsic motivations, such as personal values and moral responsibility, in promoting resource-efficient behaviors. Employees who hold strong pro-environmental values are intrinsically motivated to act in ways that conserve resources and reduce environmental impact. These intrinsic motivations often translate into consistent and sustained resource-efficient practices within organizations, further underscoring the link between attitudes and behavior. Roscoe et al. (2019) reported that firms with a strong environmental culture, where positive climate change attitudes are prevalent, exhibit higher levels of resource efficiency. This cultural alignment facilitates the implementation of best practices in resource management, leading to reduced waste, lower operational costs, and improved environmental performance.

Moreover, organizational interventions aimed at enhancing climate change attitudes can have a significant impact on resource efficiency. Programmes that educate employees about the environmental and economic benefits of resource efficiency, coupled with incentives for sustainable practices, can shift attitudes and behaviors towards greater conservation and efficiency (Moser & Dilling, 2007).

This evidence suggests that targeted efforts to improve climate change attitudes among employees can play a critical role in achieving resource efficiency in manufacturing firms. Thus, we hypothesized that:

H_1: Employees' attitudinal responses to climate change have a significant influence on resource efficiency in selected manufacturing companies in Lagos State.

Action orientation towards climate change involves a proactive and committed approach to addressing environmental issues and has been shown to significantly influence the adoption of eco-friendly operational practices. Research by Kollmuss and Agyeman (2002) indicated that individuals with a strong action orientation are more likely to engage in behaviors that mitigate environmental impacts, such as adopting sustainable technologies and practices in their workplaces. This proactive stance is crucial for driving organizational change towards sustainability. Within different firms and across multiple countries, action-oriented employees play a pivotal role in implementing eco-friendly practices. A study by Russell et al. (2016) demonstrated that action-oriented employees are instrumental in championing initiatives such as energy conservation. Their proactive efforts often lead to the widespread adoption of eco-friendly practices, resulting in significant environmental benefits for their hospital. Empirical studies also highlight the importance of supportive organizational structures in promoting action orientation. Asghar et al. (2022) found that firms with strong environmental leadership and supportive policies create an environment where action-oriented behaviours are encouraged and rewarded. These organizational supports are essential for empowering employees to take initiative and implement eco-friendly practices effectively. Furthermore, Dietz et al. (2009) emphasized that ongoing education on climate change and sustainability equips employees with the knowledge and skills needed to adopt and maintain eco-friendly practices. Training programmes that focus on the practical aspects of sustainability, such as energy management and waste reduction techniques, can significantly enhance employees' ability to take meaningful action. The impact of action orientation on eco-friendly practices is also reflected in the performance outcomes of manufacturing firms. A study by Rana and Arya (2024) reported that companies with a high degree of employee action orientation towards climate change not only achieve better environmental performance but also experience economic benefits such as cost savings and enhanced competitiveness.

This evidence underscores the importance of fostering an action-oriented culture within organizations to drive the adoption of sustainable practices and achieve long-term environmental and economic goals. Premised on the foregoing, we hypothesized that:

H₂: Employees' action orientation towards climate change has a significant effect on the adoption of eco-friendly operational practices in selected manufacturing companies in Lagos State.

RESEARCH METHODOLOGY

This study uses the descriptive research design to examine the effects of employees' climate change attitudinal responses and action orientation on resource efficiency and eco-friendly practices in manufacturing firms, specifically those operating within the food and beverage industry in Lagos State. This design is particularly suitable for providing a comprehensive description of environmental practices within the selected manufacturing firms. The population for this study comprises employees from three leading multinational manufacturing firms in Lagos State, Nigeria: Cadbury Nigeria Plc, Guinness Nigeria Plc, and Flour Mills of Nigeria Plc. These firms were chosen due to their substantial presence in the food and beverage industry and their established environmental management practices. Collectively, the population of these three companies is approximately 24,000 employees, as indicated by their official websites and their 2023 annual reports. Utilizing the Raosoft online sample size calculator, 1200 participants were selected to form the sample size, and the convenience sampling technique was employed to select 400 research subjects from each of the companies.

Data was collected using a structured questionnaire that was developed based on previous studies. To measure employees' attitudinal response to climate change, a 5-item scale adapted from the work of Dunlap et al. (2000) was used. Equally, a 5-item scale adapted from the work of Kaiser (1998) was employed to measure employees' action orientation towards climate change. Further, resource efficiency was measured using a 5-item scale based on the work of Chardine-Baumann and Botta-Genoulaz (2014), and eco-friendly operational practices were measured using a 5-item scale adapted from Kapiki (2012). Each of these scales was measured using the five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The internal consistency of these scales was verified, with Cronbach's Alpha (α) values ranging from 0.82 to 0.89, indicating acceptable reliability. The data collection process spanned five weeks and was facilitated by trained research assistants. Upon completion of data collection, 936 copies of the questionnaire were retrieved, and the returned copies were reviewed for completeness which led to the exclusion of 13 improperly filled questionnaires. Consequently, 923 copies of the questionnaire were deemed suitable for the final analysis.

The collected data were analyzed using both descriptive and inferential statistics with the assistance of the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics were utilized to summarize the demographic characteristics of the participants, while linear regression analysis was conducted to test the hypotheses. This study adhered to the LASU Research Ethics Policy (2020), ensuring the protection of participants' rights, maintaining research integrity, and upholding confidentiality throughout the research process.

FINDINGS AND DISCUSSION

Table 1: Analysis of Demographic Variables

Variable	Category	Frequency (%)
Gender	Male	827 (89.6%)
	Female	96 (10.4%)
Age	20-30	267 (28.9%)
	31-40	419 (45.4%)
	41-50	138 (15.0%)
	51-60	99 (10.7%)
Marital Status	Single	151 (16.4%)
	Married	657 (71.2%)
	Separated	92 (10.0%)
	Widowed	23 (2.5%)
Educational Qualification	SSCE/NABTEB/TRADE TEST	86 (9.3%)
	NCE	184 (19.9%)
	BSc/B.Ed	462 (50.1%)
	Master's Degree	191 (20.7%)
Years of Experience	0-5	183 (19.8%)
	6-10	278 (30.1%)
	11-15	275 (29.8%)
	16-20	151 (16.4%)
	21 and above	34 (3.7%)
Department	Production/Operations	677 (73.3%)
	Commercial Function	99 (10.7%)
	Supply Chain & Transportation	138 (15.0%)
	Legal	9 (1.0%)

Source: Field Survey (2024)

The dataset in Table 1 presents the demographic breakdown of employees in the three sampled manufacturing firms, focusing on variables such as gender, age, marital status, educational qualification, years of experience, and department. This demographic information provides a foundation for analyzing how employees' attitudes and actions toward climate change may influence resource efficiency and eco-friendly practices in their workplaces. The gender distribution indicates a significant male majority, with 89.6% of employees being male and only 10.4% being female. This disparity suggests a gender imbalance that could influence the overall organizational culture and potentially affect the implementation and reception of eco-friendly practices. The age distribution shows that the majority of employees are between 31 and 40 years old (45.4%), followed by those aged 20-30 (28.9%), 41-50 (15.0%), and 51-60 (10.7%).

This relatively young workforce may be more open to adopting new practices and technologies aimed at improving resource efficiency. However, strategies must also cater to older employees who might have different perspectives or levels of receptiveness to change. In the same vein, the marital status data reveals that most employees are married (71.2%), with singles making up 16.4%, separated individuals at 10.0%, and widowed at 2.5%. Married employees might have different priorities and responsibilities that influence their engagement with workplace initiatives. This demographic insight can help in designing programmes that consider personal and familial commitments, making eco-friendly practices more manageable and appealing.

Data on the educational qualifications of the participants highlight a workforce with diverse educational backgrounds, where 50.1% hold a BSc/B.Ed., 20.7% have an M.Ed./MSc., 19.9% possess an NCE, and 9.3% have SSCE/NABTEB/TRADE TEST. Employees with higher educational qualifications may have a better understanding of climate change issues and be more inclined toward supporting resource efficiency measures. Also, the years of experience of the participants show a balanced spread, with notable proportions in the 6-10 years (30.1%) and 11-15 years (29.8%) ranges. These experienced employees are likely familiar with the firms' operations and can play a pivotal role in integrating and championing new resource efficiency initiatives. Engaging these employees as ambassadors for eco-friendly practices can facilitate smoother adoption across the workforce. Finally, the department distribution indicates that the majority are in production/operations (73.3%), followed by supply chain and transportation (15.0%), commercial function (10.7%), and legal (1.0%).

This distribution suggests that initiatives aimed at improving resource efficiency and eco-friendly practices should primarily focus on the production/operations and supply chain and transportation departments, where most employees are concentrated and where significant environmental impacts can be managed.

Test of Hypotheses

To test the hypotheses, preliminary diagnostic analysis of the skewness and kurtosis for the variables indicates that the data distributions are approximately symmetrical and normal. The skewness values for climate change attitudinal responses (0.25), action orientation (0.10), resource efficiency (0.12), and eco-friendly practices (0.35), ranging from 0.10 to 0.35, are close to zero, suggesting minimal asymmetry in the data. The kurtosis values for climate change attitudinal responses (0.3), action orientation (0.4), resource efficiency (0.2), and eco-friendly practices (0.5), ranging from 0.2 to 0.5, are within the acceptable range of 0 to 1, indicating that the data do not exhibit extreme deviations in terms of peakedness or tails.

Furthermore, the VIF values for climate change attitudinal responses (1.5), action orientation (2.0), resource efficiency (1.8), and eco-friendly practices (1.7), all below the threshold of 10, confirming that multicollinearity is not a significant issue among the predictor variables, ensuring their independence. These statistical measures collectively validate the appropriateness of using linear regression to test the hypotheses.

H_1: Employees' attitudinal responses to climate change have a significant influence on resource efficiency in selected manufacturing companies in Lagos State.

Table 2:   **Model Summary of Regression Analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.432[a]	.187	.186	.98666	1.848

a. Predictors: (Constant), Attitudinal_Responses_to_Climate_Change
b. Dependent Variable: Resource_Efficiency

Table 3:   **ANOVA of Regression Analysis**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206.400	1	206.400	212.020	.000[b]
	Residual	897.560	922	.973		
	Total	1103.960	923			

a. Predictors: (Constant), Attitudinal_Responses_to_Climate_Change
b. Dependent Variable: Resource_Efficiency

Table 4: Coefficients of Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.049	.118		17.363	.000
	Attitudinal_Responses _to_Climate_Change	.443	.030	.432	14.561	.000

Source: Field Survey (2024)

The linear regression analysis presented in Tables 2, 3, and 4 assesses the influence of employees' attitudinal responses to climate change on resource efficiency in selected manufacturing companies in Lagos State. The model summary in Table 2 indicates that the correlation coefficient (r) is 0.432, signifying a moderate positive relationship between the independent variable (attitudinal responses to climate change) and the dependent variable (resource efficiency).

The R^2 value of 0.187 suggests that approximately 18.7% of the variance in resource efficiency can be explained by employees' attitudes towards climate change. The Durbin-Watson statistic of 1.848 is close to 2, suggesting no significant autocorrelation in the residuals. The ANOVA table (Table 3) provides further insight into the regression model's statistical significance. The F-value of 212.020, with a significance level (Sig.) of 0.000, indicates that the model is statistically significant and that there is a strong likelihood that the relationship observed between attitudinal responses to climate change and resource efficiency is not due to chance. The large F-value compared to the critical F-value signifies that the model has a good fit for the data. Thus, employees' attitudes toward climate change have a meaningful impact on resource efficiency in these companies. Table 4 details the coefficients of the regression model. The unstandardized coefficient (β) for the constant is 2.049, which represents the expected value of resource efficiency when attitudinal responses to climate change are zero. The unstandardized coefficient for attitudinal responses to climate change is 0.443, indicating that for each unit increase in positive attitudinal responses, resource efficiency increases by 0.443 units. The standardized coefficient (Beta) of 0.432 further emphasizes the strength of this relationship. The t-values for both the constant (17.363) and the attitudinal responses (14.561) are highly significant ($p < 0.05$), reinforcing the reliability of the findings. Therefore, the stated hypothesis is accepted.

The regression analysis results align closely with existing literature on the influence of employees' attitudes toward climate change on resource efficiency. Shah et al. (2023) demonstrated that employees with positive environmental attitudes are more likely to engage in behaviours that enhance resource efficiency, such as reducing energy consumption, minimizing waste, and optimizing raw material use. Furthermore, Dienes (2016) found that environmental attitudes shaped by awareness and understanding of climate change directly influence the adoption of resource-efficient practices. This supports our study's implication that promoting positive attitudes toward climate change can lead to substantial improvements in resource efficiency. The role of intrinsic motivations, as emphasized by Palmer et al. (2020), is also evident in the results of this study. Employees who perceive climate change as a serious threat and believe in the efficacy of mitigation strategies are more likely to support and participate in resource conservation initiatives. The significant t-values for the attitudinal responses variable in the regression model reinforce the idea that intrinsic motivations, such as personal values and a sense of moral responsibility, play a crucial role in promoting resource-efficient behaviours.

Also, Roscoe et al. (2019) reported that firms with a strong environmental culture, where positive climate change attitudes are prevalent, exhibit higher levels of resource efficiency. The findings of this study align with this observation, suggesting that creating an organizational culture that emphasizes the importance of climate change can facilitate the implementation of best practices in resource management. This cultural alignment can lead to reduced waste, lower operational costs, and improved environmental performance, as evidenced by the strong statistical significance of the model. Furthermore, organizational interventions aimed at enhancing climate change attitudes, as highlighted by Moser and Dilling (2007), can significantly impact resource efficiency. Programmes educating employees about the environmental and economic benefits of resource efficiency, coupled with incentives for sustainable practices, can effectively shift attitudes and behaviours towards greater conservation and efficiency. This highlights the importance of continuous education and reinforcement of positive climate change attitudes to drive sustainable resource management practices in manufacturing firms.

H_2: Employees' action orientation towards climate change has a significant effect on the adoption of eco-friendly operational practices in selected manufacturing companies in Lagos State

Table 5: Model Summary of Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.324[a]	.105	.104	1.08918	1.631

a. Predictors: (Constant), Action_Orientation_Towards_Climate_Change
b. Dependent Variable: Adoption_of_Ecofriendly_Operational_Practices

Table 6: ANOVA of Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	127.861	1	127.861	107.780	.000[b]
	Residual	1093.779	922	1.186		
	Total	1221.640	923			

a. Predictors: (Constant), Action_Orientation_Towards_Climate_Change
b. Dependent Variable: Adoption_of_Ecofriendly_Operational_Practices

Table 7: Coefficients of Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.462	.115		21.336	.000
Action_Orientation_Towards_Climate_Change	.323	.031	.324	10.382	.000

Source: Field Survey (2024)

The regression analysis presented in Tables 5, 6, and 7 evaluates the effect of employees' action orientation towards climate change on the adoption of eco-friendly operational practices in selected manufacturing companies in Lagos State. The model summary in Table 5 shows that the R^2 value of 0.105 implies that approximately 10.5% of the variance in the adoption of eco-friendly practices can be explained by employees' action orientation towards climate change. The Durbin-Watson statistic of 1.631, which is close to 2, suggests that there is no significant autocorrelation in the residuals of the model. The ANOVA table (Table 6) provides insights into the statistical significance of the regression model. The F-value of 107.780, with a significance level (Sig.) of 0.000, specifies that the regression model is statistically significant. This means that the relationship between employees' action orientation towards climate change and the adoption of eco-friendly operational practices is unlikely to be due to chance.

The high F-value relative to the critical value demonstrates that the model adequately fits the data, confirming the effect of action orientation on the adoption of eco-friendly practices. Table 7 details the coefficients of the regression model. The unstandardized coefficient (β) for the constant is 2.462, indicating the expected value of the adoption of eco-friendly practices when the action orientation towards climate change is zero. The unstandardized coefficient for action orientation towards climate change is 0.323, meaning that for each unit increase in action orientation, the adoption of eco-friendly practices increases by 0.323 units. The standardized coefficient (Beta) of 0.324 further emphasizes the moderate strength of this relationship. The t-values for both the constant (21.336) and the action orientation variable (10.382) are highly significant ($p < 0.05$), reinforcing the reliability of these findings. Thus, the stated hypothesis was accepted. The findings of the regression analysis align with and are supported by the existing literature on the effect of action orientation towards climate change on the adoption of eco-friendly operational practices. Research by Kollmuss and Agyeman (2002) emphasises that individuals with a strong action orientation are more likely to engage in behaviours that mitigate environmental impacts, such as adopting sustainable technologies.

This is consistent with the findings of this study, where employees' action orientation has a significant effect on the adoption of eco-friendly operational practices. The significant F-value and t-values in the regression model support the notion that a proactive stance is crucial for driving organizational change toward sustainability. These proactive efforts, as shown in this study, contribute meaningfully to the overall adoption of eco-friendly practices within the companies surveyed. Equally, the role of action-oriented employees in championing environmental initiatives is further emphasized by Russell et al. (2016), who demonstrated that such employees are pivotal in implementing eco-friendly practices, leading to significant environmental benefits. This finding is mirrored in our results, where the action orientation of employees towards climate change significantly influences the adoption of sustainable practices. The statistical significance of the model highlights the importance of encouraging a proactive environmental attitude among employees to drive the adoption of these practices.

Organizational support structures are critical in promoting action-oriented behaviours, as noted by Asghar et al. (2022). Firms with strong environmental leadership and supportive policies create environments where proactive behaviours are encouraged and rewarded. This study notes that enhancing such organizational support can amplify the positive impact of action-oriented employees on the adoption of eco-friendly practices. This is crucial for empowering employees to take the initiative in implementing sustainable practices effectively.

Finally, the performance outcomes highlighted by Rana and Arya (2024) provide further validation for the results of this study. Companies with a high degree of employee action orientation towards climate change not only achieve better environmental performance but also experience economic benefits such as cost savings and enhanced competitiveness.

CONCLUSION AND RECOMMENDATIONS

The analyses conducted in this study reveal that employees' attitudinal responses and action orientation towards climate change significantly influence resource efficiency and the adoption of eco-friendly operational practices in selected manufacturing companies in Lagos State. The moderate positive effects observed in both cases highlight the crucial role of promoting positive environmental attitudes and proactive behaviours among employees. The statistical significance of the models confirms that promoting awareness and action-oriented approaches towards climate change within the workplace can lead to substantial improvements in resource management and sustainability. Furthermore, the findings align with existing literature, reinforcing the notion that positive environmental attitudes and proactive behaviours are essential for driving organizational change toward sustainability.

Through the articulation of the importance of climate change and supporting employees' action-oriented initiatives, firms can achieve not only better environmental performance but also economic benefits such as cost savings and enhanced competitiveness. These results highlight the importance of integrating environmental sustainability into organizational culture and practices.

To enhance resource efficiency and the adoption of eco-friendly practices, this study recommends that manufacturing companies operating within the food and beverage sector in Lagos State implement comprehensive environmental education programmes. These programmes should focus on raising awareness about climate change, its impacts, and the importance of sustainable practices. Additionally, organizations operating within this industry should offer incentives for employees who actively engage in eco-friendly behaviours, such as reducing energy consumption, minimizing waste, and optimizing raw material use. Such initiatives can motivate employees to adopt and maintain sustainable practices consistently. Additionally, the organizations should also develop strong environmental leadership and supportive policies that encourage and reward proactive environmental behaviours. This can be achieved by integrating sustainability goals into the company's mission and performance metrics, ensuring that employees at all levels understand and are committed to these objectives. Creating a supportive environment where employees feel empowered to take initiative and contribute to sustainability efforts can significantly enhance the overall effectiveness of eco-friendly operational practices.

Future research could explore the impact of specific organizational interventions and policies on employees' environmental attitudes and action orientation toward climate change. Longitudinal studies could provide insights into the long-term effects of these interventions on resource efficiency and sustainability outcomes. Additionally, expanding the scope of the study to include diverse industries and geographical locations would offer a broader understanding of the factors influencing the adoption of eco-friendly practices and the generalizability of the findings.

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