

**GREEN SKILLS MANAGEMENT AND EMPLOYEE PRODUCTIVITY IN  
MANUFACTURING FIRMS SOUTHEAST NIGERIA**

**Emeh, Ndidiamaka Chioma, Ph.D\***

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Orga, Josephine Ivoma Ph.D,**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Ugwu, Fidelis Abel Ph.D,**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Everist Onyehuluchukwu Eneh, Ph. D,**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Marire Mary Ijeoma Ph. D,**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Onuoha, Charity Ekwutosi Ph. D,**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Anukwe Grace Ifeoma, and**

Department of Marketing, Enugu State University of Science and Technology, Nigeria

**Ekwochi, Eucharia Adaeze Ph.D**

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**\*Corresponding author:** Emeh, Ndidiamaka Chioma, Ph.D,

Department of Business Administration, Enugu State University of Science and Technology,  
Nigeria.

**Abstract**

The study examined the effect of green skills management on employee productivity in manufacturing firms in southeast Nigeria. The specific objectives are to; examine the effect of technical knowledge on employee productivity and evaluate the effect of employee attitudes on employee productivity of manufacturing firms in southeast Nigeria. A survey research design was adopted for the study. A well-structured questionnaire was used to collect data. The study's analysis method included a dichotomous logistic regression test both at the bivariate and multivariate level and a correlation test to ascertain the inter-connectedness of the variables under study. The study revealed that Technical Knowledge has a significant effect on employee productivity with a P-value of  $(0.000 < 0.05)$  and Employee attitude has a significant effect on employee productivity with a P-value of  $(0.000 < 0.05)$  in manufacturing firms in southeast Nigeria. We concluded that green skills management significantly affects employee productivity in manufacturing firms in

southeast Nigeria. The study recommended that Manufacturing firms in Southeast Nigeria should prioritize investments in green skills development initiatives aimed at enhancing employees' technical knowledge and competencies in sustainable practices.

**Keywords:** Employee, Green, Management, Productivity, Skills

### 1.1 Introduction

As environmental issues become more widely recognized in the modern day, companies from all sectors of the economy are forced to reconsider their operational plans and make sustainability a core component of their corporate culture. Amidst this paradigm change, the idea of "green skills management" has come to light as a crucial tool for encouraging eco-friendly behaviors inside corporate structures. Fundamentally, managing green skills involves nurturing, refining, and applying employee competencies to support the adoption and execution of sustainable practices, which reduce environmental impact and improve organizational performance. The idea that workers are important change agents within organizational ecosystems is at the heart of the conversation around green skills management. Providing employees with the necessary skills, knowledge, and attitude to handle sustainability challenges is in line with CSR requirements and fosters a resilient and innovative workplace culture. Furthermore, companies can gain a competitive edge, productivity, and cost savings by developing a workforce that is skilled at incorporating environmental factors into regular operations.

Within the complex realm of organizational performance, worker productivity is a vital component of long-term development and well-being. Productivity, which is defined as the amount of output produced per unit of input used, is a gauge of operational performance and organizational effectiveness. While process optimization and technological advancements have been the mainstays of traditional approaches to productivity enhancement, the incorporation of green skills management adds a fresh perspective by highlighting the significance of sustainability-driven practices in improving employee performance. Although the value of green practices in improving organizational performance is increasingly acknowledged, there is still a dearth of empirical research on the precise relationship between green skills management and worker productivity in Nigeria's manufacturing sector, especially in the Southeast. By filling up this research vacuum, this study hopes to further managerial practice and academic literature by clarifying how green skills management affects worker productivity and organizational results.

### 1.2 Statement of the Problem

The incorporation of sustainable practices, specifically via green skills management, has been the focus of increased attention as firms endeavor to strike a balance between operational efficiency and environmental stewardship. Southeast Nigeria's manufacturing industry faces numerous obstacles, from degrading environmental conditions to financial limitations. Amidst these complications, one possible way to solve environmental issues and improve organizational performance is to integrate sustainable practices, especially through green skills management. But even with the increasing focus on sustainability and the need for higher productivity, it is still unclear how exactly green skills management affects worker productivity in Southeast Nigerian manufacturing companies.

### 1.3 Objective of the study

The main objective of this study is to examine the effect of green skills management on employee productivity in manufacturing firms in southeast Nigeria. The specific objectives are to;

- i. Examine the effect of technical knowledge on employee productivity of manufacturing firms, in southeast Nigeria.
- ii. Evaluate the effect of employee attitudes on employee productivity of manufacturing firms in southeast Nigeria.

### 1.4 Hypotheses of the study

- i. Technical knowledge has no significant effect on employee productivity of manufacturing firms, in southeast Nigeria.
- ii. Employee attitudes have no significant effect on employee productivity of manufacturing firms in southeast Nigeria.

## **Review of Related Literature**

### **2.1 Conceptual Review**

#### **Green Skills**

Green skills are a collection of abilities that allow workers to actively participate in and negotiate the ongoing, dynamic development of the workplace about sustainability. Green skills are those that are required to live in, build, and sustain a society that lessens the impact of human activity on the environment, according to CEDEFOP (2012). According to Arasinah et al. (2017), "green skills" are technical abilities, moral principles, or work-related attitudes necessary to promote or sustain the sustainability of social activities, the economy, and income in business, industry, and the community. The notions of green skills, however, are not given much attention because today's youth view employment in green jobs as unpopular, filthy, and low-class (CEDEDOP, 2012). Green talents, according to Arasinah et al. (2017), are the information, skills, values, and attitudes necessary for growth in life and for the establishment of a community that practices sustainable and effective resource management. In their review research, Pavlova (2015) summarizes the benefits of incorporating green-skill elements into technical and vocational education. These benefits include enhancing life quality, preserving science and technology, protecting the environment, putting in a lot of effort, abiding by the law, and maintaining integrity when performing daily tasks. Green skills can benefit a nation greatly, and by extension, the entire planet.

When combined, these three components of "green skills" refer to the knowledge (cognitive dimension), skills/abilities (psychomotor dimension), and attitudes/values (affective dimension) that employees must possess in order to support the environment, economy, and society's sustainable development. Environmental protection knowledge can be considered a component of green skills from a cognitive perspective. From a psychomotor standpoint, a "green skill" is the capacity to decrease energy use or lower greenhouse gas emissions, for example. Green talents also include the affective component, such as a person's drive to protect the environment (Ecorys, 2008; Apollo, 2008). This comprises not just specific information, skills, and experience but also transferable performance, personal values, empathy, and perspectives, as well as the ability to comprehend processes. The cornerstone for talented workers in the green transformation of the economy is the trinity of green knowledge, transferable skills, and a sustainability mentality. Depending on the industry, field of endeavor, and starting point, each employee has a distinct focus and level of training that must be provided to fully integrate green skills into the workforce. No "one size fits all" solution exists. The abilities needed to modify procedures, offerings, and goods in response to climate change as well as the associated environmental regulations and requirements are known as "green skills." They accept the knowledge, skills, attitudes, and values needed to create and sustain a society that is resource-efficient and sustainable. According to Vona et al. (2015), "green skills" are the information, skills, values, and attitudes required to create, sustain, and promote a sustainable and resource-efficient society.

#### **Green Skills Management**

Verdant the process of comprehending, fostering, and utilizing people and their skills is known as skills management. Effective skills management should pinpoint the abilities needed for certain job responsibilities, the abilities of particular workers, and any discrepancies between the two. The activity of comprehending, fostering, and utilizing people and their skills is known as skills management. Cascio (1992). A well-executed skills management system should pinpoint the abilities needed for certain job roles, the abilities of particular workers, and any discrepancies between the two. The institution or organization in question can describe the necessary competencies.

Typically, a skills matrix, competency framework, or skills framework is used to define them. This consists of a set of skills and a grading scheme that defines each skill's specific requirements. The best results from skills management come from continuous processes when people evaluate and update their recorded skill sets regularly. These upgrades ought to happen as often as the normal line manager reviews that employees receive, and more often than when their skill sets are changed. Managers need to be competent to carry out their duties and take on various responsibilities. Katz (1991) distinguished three managerial competencies—technical, human, and conceptual—that are necessary for effective management.

Technical talent is the ability to understand and use a method or procedure. Managers employ specialized procedures, methods, and equipment. Effective interpersonal communication and cooperation between managers and staff are key components of human capability. The way an idea functions is part of the conceptual talent. Managers generate concepts, solve issues imaginatively, and comprehend abstract relationships. Thus, human skills are concerned with people, technical skills are with objects, and conceptual skills are with ideas. Purcell et al. (2003) claim that skills management offers an organized method for enhancing both individual and group abilities as well as a common language for talking about skills and the overall advantages received by staff members.

Managers can learn about the strengths and shortcomings of the employees who report to them by using skills management. Additionally, it can help them look for workers with certain skill sets (such as for a position on a specific project). An organization's executives can see areas of strength and weakness in terms of skills by viewing a rolled-up picture of skills and gaps in abilities across the organization. This helps them to prioritize areas for skill development and prepare for the future based on the staff's talents both now and in the future. Employees would be aware of the skills needed for their position and any skill gaps they may have as a result of skills management. Depending on the company, Ighelogbo (2016) may also lead to a personal development plan (PDP) of training to close any of those skill gaps over a predetermined amount of time. Workers benefit from better self-awareness and comprehension of their advantages and disadvantages, from goal-setting to realizing the worth they offer to the company (which can raise morale).

### **Technical Skill**

Technical skills are knowledge and abilities related to the use of particular tools, methods, techniques, or approaches. Stated differently, managers and government leaders have to possess sufficient information and cultivate proficiency in organizing, planning, and assessing the scientific performance of their personnel or establishment via educational and learning endeavors (Alimi and Ifah, 2012). Technical skill, according to Kamal (2012), is the ability to perform a certain sort of labor or activity with knowledge and proficiency. It comprises analytical prowess, proficiency in a particular field, and the ability to use the right instruments and methods.

Katz (1995) uses the following examples to illustrate technical talent: in a computer software company, technical skill can involve understanding software language and programming, the company's software products, and how to make these products work for customers. Similar to this, technical skills in an accounting company could include knowing generally accepted accounting principles and being able to apply them to a client audit. Technical skills in all of the aforementioned cases entail working directly with a fundamental product or procedure inside a company. Technical proficiency is necessary to generate the actual goods that a business is intended to produce.

Technical skills comprise a manager's application of specific knowledge or expertise. However, Korman (2010) noted that technical skills include specialized training, competence in specialized activities, industry or field expertise, and the capacity to complete a given work and its goals. People with this kind of skill include engineers, accountants, architects, computer scientists, etc. There are various methods to develop technical abilities, including coaching, work rotation, training, educational programs, etc. At lower managerial levels, technical abilities are particularly crucial (Okwurume, 2023). Technical skills pertain to the managers' proficiency and knowledge of a certain task they are performing.

Because it requires a manager's analytical tendency to choose the best course of action to get desired outcomes, this skill is known as the analytical skill. Technical proficiency is a sign that a manager has the necessary expertise and understanding of the operations of the company. Technical expertise is essential for managers in corporate settings since they oversee employees' actions to ensure the organization's objectives are realized. They must be knowledgeable about methodologies, processes, procedures, and techniques. Technical proficiency is essential for every manager in a business setting since it helps the organization achieve its objectives. Managers must be knowledgeable about the methods, processes, procedures, and techniques of providing services to the general public (Bode, 2020).

### **Employee Attitudes**

Individuals' or groups' thoughts and feelings are referred to as attitudes. The attitudes and sentiments are aimed against other individuals, things, or concepts. Saying "I like my job" is a sign of a person who has a good outlook on their work. People's conduct and/or actions are frequently influenced by and a product of their attitudes. In the absence of outside interventions, attitudes may result in the anticipated behavior. Although attitudes are a psychological phenomenon that cannot be directly examined, they can be indirectly observed through evaluating their effects. According to Lines (2005), employee attitudes regarding organizational change are psychological tendencies based on evaluations of the changes, both favorable and unfavorable.

According to Bouckenooghe (2009), employees' eagerness and openness to accept change indicate their positive attitudes toward it, but their resistance and cynicism about it demonstrate their negative views. According to Singh and Gupta (2016), personnel who exhibit a good attitude toward change are dependable, whereas those who have a negative attitude toward change will impede the organization's progress. Individuals bring a variety of perspectives, expectations, aspirations, and work attitudes to their occupations. They also anticipate receiving some acknowledgment from the company. Job satisfaction and employees' attitudes are closely related.

When a worker is happy in their position, they will have a positive attitude about their work. Pay, promotions, work, supervision, and other factors all affect how happy one is in their job. Organizational dedication is a result of these elements.

### **Types of employees' attitudes**

According to the results of several research, an employee's attitudes usually fall into one of the six groups listed below.

- i. Fulfillment seekers: Individuals holding this mindset think that a job should give them the chance to showcase their skills. Payment and other advantages would not concern them.
- ii. High achievers: High achievers have specific life goals they want to fulfill via their employment. They take initiative at work and advance to become engineers, physicians, and attorneys.
- iii. Clock punchers: They believe that careers and occupations are not the same. They have a conflicted attitude about their work.
- iv. Risk-takers: To succeed financially, they are willing to take chances.
- v. Ladder climbers: They look for a steady income and employment stability. Thus, after they acquire a job, they won't pursue better positions. They will work for a single employer for an extended period. The risk-taking mindset is in opposition to this one.
- vi. Paycheck Cashers: Those who choose occupations with better earnings over positions that allow them to showcase their talents. Their thinking is dominated by the aspect of financial standing. (1992, Bhuvaneshwara).

Positive and bad emotions at work are contagious and quickly spread to coworkers. Unfavorable attitudes among employees may spread. Reduced goodwill and trust among coworkers hinder collaboration, which lowers output. Employees who work in unfavorable social environments feel alone and are more likely to avoid or quit their jobs. Positive attitudes, on the other hand, improve the quality and productivity of communication and teamwork. Positive attitudes foster a supportive

social environment that incentivizes team participation and instills a sense of emotional commitment to the company's success in its personnel (Gomathy, 2022).

### **Employee Productivity**

The primary measure of a production system's efficacy is productivity (Abramo & D'Angelo, 2014). Productivity is generally understood to be the ratio of a volume measure of output to a volume of input consumption, notwithstanding the use of several definitions. It assesses how well an organization uses labor and capital as production inputs to generate a specific amount of output (Rogers, 1998; OECD, 2001). When an organization achieves the same output with a lower input or when an increase in production is attained with a lower input, its productivity rises. In addition to other factor inputs, productivity can also be measured in terms of capital productivity and labor or employee productivity (OECD, 2001). When modeling the productive potential of human resources, productivity progression is a crucial component.

When workers are productive, the company can achieve its objectives of maximizing shareholder profit. According to Njururi and Okech (2016), this is because workers decide how well other organizational resources are utilized. High productivity levels are a key factor in the organization's success because they reduce unit costs. Companies must engage in capacity development to increase productivity and performance in addition to efficiency in an increasingly competitive global business environment. One of the sources of competitive advantage is employee productivity. Employees in a company could be viewed as strategic due to their involvement in the utilization of other resources. On the other hand, even if a company has great resources, it won't be able to compete if it doesn't make the necessary investments to draw and keep the most talented employees (Njururi and Okech, 2016).

## **2.2 Theoretical Review**

### **Scientific Management Theory**

Frederick W. Winslow American inventor and engineer Taylor created the scientific management theory by combining his expertise in science and engineering with his understanding of management. His two most significant works on his theory are Principles of Scientific Management (1911) and Shop Management (1903). The father of scientific management theory is recognized as F.W. Taylor. The scientific management theory developed by F.W. Taylor is applied in almost all contemporary manufacturing and other economic enterprises. Production, planning, quality control, process design, cost accounting, and even economics are all areas where he left his mark. You can comprehend how manufacturers make their products and oversee their workforce if you grasp the scientific management concept.

Additionally, you will comprehend the significance of quantitative analysis, or the examination of facts and statistics to enhance the efficacy and efficiency of manufacturing. Taylor used data collecting and analysis as a quantitative approach to the study of management. To increase productivity, he and his adherents, for instance, carried out motion studies. He broke tasks down into smaller, more manageable motions and determined the most effective approach to accomplish the work by analyzing the motion needed to perform each activity. The goal of scientific management theory is to determine the most effective technique to complete a task. Even if the theory as a whole and these particular ideas are appropriate, it has not escaped criticism in the modern day.

Critics contended that:

- a. Greater productivity per worker will lead to joblessness.
- b. Because it originated in engineering, scientific management was commonly perceived as concentrating too much on the technical components of job administration at the expense of human consequences.
- c. It made it possible to tie compensation exclusively to productivity and not to other factors, such as seniority, which led to the development of a "carrot and stick" approach to employee motivation.

- d. Scientific managers pay little attention to higher management or general management and are primarily concerned with the administration of the organization.

### **Social Exchange Theory (SET)**

Among the concepts that have the greatest influence on our understanding of workplace behavior is social exchange theory (SET). Theorists concur that social trade is a sequence of contacts leading to duties, even though differing perspectives on the concept have been proposed (Emerson, 1976). These interactions are typically viewed in SET as mutually dependent and dependent on one another's activities (Blau, 1964). Additionally, SET highlights that these interconnected transactions can produce relationships of the highest caliber (Cropanzano & Mitchell, 2005). SET's fundamental belief is that connections develop into mutually committed, dependable, and trusting bonds. Parties must follow specific "rules" of exchange to do this. The term "normative definition of the situation that forms among or is adopted by the participants in an exchange relation" refers to the rules of exchange (Emerson, 1976).

Rules and conventions of exchange serve as "the guidelines" for exchange processes in this sense (Cropanzano & Mitchell, 2005). In trade relationships, trust and investment are entwined. The original purpose of SET was to take interpersonal interaction development and maintenance into consideration. Since then, it has been used to discuss relationships in the workplace or the employment relationship. Differences in the parties participating in the connection are of particular interest to social exchange theorists. It is generally assumed that employees can establish distinct social exchange connections with their direct supervisors, fellow employees, and employers. These unique connections have behavioral ramifications. To be more precise, people are inclined to reciprocate kindness and assistance to the other person in a social exchange connection because they return the favors they receive (Cropanzano & Mitchell 2005).

### **2.3 Empirical Review**

Njururi and Okech (2016) conducted a study to examine factors affecting employee productivity in Kenya's private limited companies in the manufacturing sector. The study intends to determine how employee productivity is affected by institutional factors; how employee productivity is affected by human resources practices; and lastly, how employee attributes impact productivity in Kenyan private limited enterprises. The study used a descriptive design of inquiry. The findings showed that the working environment, employee experience and training, and chances for skill development within the chosen organizations were the key variables influencing worker productivity.

Arifin (2019) conducted a study on the review of the factors that can influence employee attitudes toward organizational change in selected companies in South Asia. The purpose of the study is to identify the variables that may affect workers' perceptions of organizational change, analysis, and evaluation. A content analysis was done on nine publications published between 2012 and 2016 that dealt with employee attitudes toward organizational change. The findings showed that there are two main categories of factors that affect employee attitudes regarding organizational change: extrinsic and intrinsic elements.

Ochieng and Okumu (2023) conducted a study to establish the influence of employee attitudes on employee performance in Nzoia Sugar Company in Bungoma County, Kenya. The goal of the study is to assist management in creating plans that are suitable for controlling staff attitudes and output in Kenya's sugar sectors. A descriptive survey research design was used in the study. The findings showed a statistically significant relationship between employee attitudes and performance, and they also suggested that to improve employee performance inside the organizations, employees' attitudes should be well understood.

Olalekan et al (2023) conducted a study on the effect of technical skills on the productivity level of cataloguers in tertiary institutions in Edo state, Nigeria. The purpose of the study is to look into how

technical skill affects catalogers' production levels, how long-term effects last, and how end users will be affected if catalogers in Edo State's tertiary institutions are less productive. For this study, a descriptive survey research design was chosen. The study's findings showed that technical proficiency positively affects Edo State catalogers' production levels. It also suggested that organizations work to inspire catalogers and offer them up-to-date cataloging and categorization tools.

### 3. Methodology

A survey research design was adopted for the study. This study aims to examine the effect of green skills management and employee productivity in manufacturing firms in southeast Nigeria. A well-structured questionnaire was used to collect data. A total of 450 questionnaires were distributed to these companies' financial managers. Only 410 out of these questionnaires were returned and analyzed. There were four sections in the questionnaire. The first section included 6 items designed to examine the technical knowledge of staff. For ease of interpretation, the responses were analyzed as "Agree" and "Disagree" for all the questions. The second section of the questionnaire measured the employee attitude. The third investigates employee productivity in an organization by respondents and evaluates whether they have reasonably high or low productivity in their organization. The last measured behavioral factors affecting businesses in Enugu state and its environment. The study's analysis method included a dichotomous logistic regression test both at the bivariate and multivariate level and a correlation test to ascertain the inter-connectedness of the variables under study. Furthermore, the Cronbach's alpha test of internal consistency was used to assess the reliability of our estimates and inferences.

### 4. RESULTS

There have been many speculations as to how green skill management affects employee productivity in organizations, Vona et al. (2015) opined a non-linear relationship suggesting that employee productivity drops remarkably when the green skill management is not properly in place within an organization. It is on this premise that we evaluate the green skill management having proxies (technical skill and employee attitude) within Nigeria to see their reactions and how much they are impacted by changes in employee productivity. The three different segments of the questionnaire were recorded and analyzed by coding the responses as "Agree", "Strongly Agree", "Undecided", "Disagree", and "Strongly Disagree". For convenience and ease of interpretation, it was further re-categorized as "Agree" and "Disagree".

#### Reliability analysis:

Cronbach's Alpha ( $\alpha$ ) is a measure of internal consistency or reliability. It is used to identify how closely related a set of test items are as a group.

**Table 6 Cronbach's reliability analysis output**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
0.826	0.817	17

As the Cronbach's alpha is = 0.826, this shows a strong inter-relationship or inter-connectedness among the variables. Hence, we can strongly affirm that our estimates are valid and statistically significant.

#### Hypothesis Testing

##### Hypothesis One



H<sub>0A</sub>: Technical knowledge has no significant effect on employee productivity of manufacturing firms in southeast Nigeria.

H<sub>1A</sub>: Technical Knowledge has a significant effect on employee productivity of manufacturing firms in southeast Nigeria.

Alpha = 0.05

Decision Rule: Reject H<sub>0</sub> if P-value < 0.05

Computation:

**Table 1 Logistic regression output on the relationship between technical knowledge and employee productivity.**

	What is the effect of technical skill on the employee productivity?		Bivariate Analysis		Multivariate Analysis	
	Yes	No	OR	P-value	AOR	P-value
<b>I understand how the technical skill affects the employee productivity</b>						
Agree	228 (80.0)	47 (37.6)	0.151	<b>0.000*</b>	0.049	<b>0.000*</b>
Disagree	57 (20.0)	78 (62.4)				
<b>Managing technical skills poses significant challenges to employee productivity</b>						
Agree	197 (69.1)	50 (40.0)	0.298	<b>0.000*</b>	0.309	<b>0.000*</b>
Disagree	88 (30.9)	75 (60.0)				
<b>Have you received feedback from employees suggesting that improved technical skills enhance their productivity?</b>						
Agree	144 (50.5)	53 (42.4)	0.721	0.130	4.281	<b>0.000*</b>
Disagree	141 (49.5)	72 (57.6)				
<b>Is there a direct relationship between the technical proficiency of employees and the productivity of the organization as a whole?</b>						
Agree	207 (72.6)	59 (47.2)	0.337	<b>0.000*</b>	0.116	<b>0.000*</b>
Disagree	78 (27.4)	66 (52.8)				
<b>Would you say that investing in technical skill development programs positively influences employee productivity?</b>						
Agree	157 (55.1)	68 (54.4)	0.973	0.897	0.288	<b>0.000*</b>
Disagree	128 (44.9)	57 (45.6)				

OR = Odds Ratio AOR = Adjusted Odds Ratio \*P-value < 0.05 (Statistically significant)

It is pertinent to mention that “Disagree” is the reference variable in the analysis. From the bivariate analysis, we see an 84.9% odds ratio depicting respondents who agreed to have a full understanding of the effect of technical skill on employee productivity. The P-value (0.000) is statistically significant both at the bivariate and multivariate levels. This confirms that negative reviews will discourage potential productivity, but this worsens even with depleting technical skills.

69.1% of respondents admit that managing technical skills poses a great challenge to employee productivity which affected their productivity with 70.2% of odds at the bivariate level and 69.1% odd at the multivariate level with statistically significant P-values on both levels.

27.9% of odds ratio represents respondents who admit they have received feedback from employees suggesting that improved technical skill enhance their productivity. This was not significant at the bivariate level but very significant at the multivariate level.

72.6% of the respondents affirm that there is a direct relationship between the technical proficiency of employees and the productivity of their organizations. With an odds ratio of 66.3% at the bivariate level and 88.4% at the multivariate level to show how effective this is. The P-value was significant at both levels.

**Hypothesis Two**

H<sub>0B</sub>: Employee attitude has no significant effect on employee productivity of manufacturing firms in southeast Nigeria.

H<sub>1B</sub>: Employee attitude has a significant effect on employee productivity of manufacturing firms in southeast Nigeria.

Alpha = 0.05

Decision Rule: Reject  $H_0$  if P-value  $< 0.05$

Computation

**Table 4: Spearman's rank correlation coefficient on Employee attitude and Employee Productivity**

Employee Attitude / Employee Productivity	Employee attitude	Employee productivity
Employee attitude	1	0.030 (0.000*)
Employee productivity	0.030 (0.000*)	1

Spearman's rank correlation coefficient (P-values) \*P-value  $< 0.05$  (Statistically significant)

The correlation analysis reveals a statistically significant but weak positive relationship between employee attitude and employee productivity, with a correlation coefficient of 0.030 and a probability value of 0.000. The positive correlation implies that as employee attitude improves, there is a tendency for a slight increase in employee productivity. However, the weak correlation coefficient of 0.030 indicates that the relationship is not very strong, suggesting that changes in employee attitude only contribute to a limited extent to variations in employee productivity. While the statistical significance of the correlation implies that the observed relationship is unlikely to occur by random chance, it is essential to consider that practical significance may be minimal due to the modest strength of the correlation.

These findings suggest that while fostering a positive employee attitude could have some impact on productivity, other factors likely play a more substantial role in influencing overall workplace performance. Further exploration and a holistic understanding of organizational dynamics are necessary to identify and address the multifaceted elements that contribute to employee productivity in the specific context under investigation.

### Discussion of Findings

In a bid to identify the effect of green skill management such as technical skill and employee attitude on employee productivity, we use logistic regression at both the bivariate and multivariate levels to pinpoint the immediate and long-run effect on employee productivity. Keeping in mind that "Disagree" was used as the reference variable. The bivariate analysis indicated an 84.9% odds ratio for respondents who agreed to have a full understanding of the effect of technical skill on employee productivity. Where the coefficient for technical skills is 0.849, indicates a positive relationship between possessing technical skills and employee productivity. In logistic regression, the coefficient represents the change in the log odds of the dependent variable (in this case, employee productivity) associated with a one-unit change in the independent variable (technical skills).

With a coefficient of 0.849, the positive sign suggests that an increase in technical skills is associated with higher log odds of improved employee productivity. This implies that employees with enhanced technical skills are more likely to be productive compared to those with lower technical proficiency. The magnitude of the coefficient (0.849) indicates the strength of this association; a higher coefficient generally signifies a more substantial impact. It's important to note that logistic regression results are typically interpreted in terms of odds ratios. In this context, a one-unit increase in technical skills is associated with an odds ratio of  $\exp(0.849) \approx 2.34$ . This means that holding other factors constant, employees with higher technical skills have approximately 2.34 times the odds of being productive compared to those with lower technical skills.

In summary, the logistic regression result suggests a statistically significant and positive relationship between technical skills and employee productivity, indicating that possessing advanced technical skills is associated with an increased likelihood of higher productivity in the workplace.

### 5. Conclusion

To sum up, this study clarifies the complex interplay among technical proficiency, staff attitudes, green skills management, and productivity in Southeast Nigerian manufacturing companies. Empirical investigation has revealed that employee attitudes and technical knowledge have a major impact on worker productivity. This emphasizes the significance of incorporating sustainability principles into corporate practices and culture. First off, the results highlight how important technical expertise is in boosting worker productivity in Southeast Nigerian manufacturing companies. Workers who possess the technical skills required for sustainable practices are more productive, which improves organizational performance and operational efficiency. Therefore, funding for training programs and green skills development efforts is crucial to equipping staff members to handle the complexity of sustainable manufacturing procedures.

The report also emphasizes how crucial employee attitudes are to productivity results. Employee productivity is positively correlated with positive attitudes toward environmental stewardship and sustainability projects. Encouraging staff involvement, dedication, and buy-in towards sustainability goals through the development of a supportive organizational culture is critical to optimizing productivity gains and propelling organizational success.

We concluded that green skills management has a significant effect on employee productivity in manufacturing firms in southeast Nigeria.

### **Recommendations**

The present study suggests that staff productivity in manufacturing enterprises located in Southeast Nigeria is influenced by green skills management, technical knowledge, and employee attitudes. Consequently, the following recommendations are put up to improve organizational sustainability and effectiveness:

- i. Manufacturers in Southeast Nigeria ought to give top priority to funding green skills development programs that aim to improve workers' technical proficiency in sustainable practices. Customized training courses, workshops, and certifications in waste minimization, energy efficiency, environmental conservation, and other pertinent fields can help achieve this. Organizations may promote a sustainable culture and increase productivity by providing staff with the required training and resources.
- ii. Companies should make a concerted effort to foster a culture of support that appreciates sustainability and fosters a favorable attitude among staff members toward environmental stewardship. Transparent communication, employee involvement campaigns, and award schemes that emphasize and honor contributions to sustainability objectives can all help achieve this. Through cultivating a feeling of direction and dedication among staff members, companies can leverage their abilities to boost output while advancing a common understanding of sustainability.

### **References**

1. Abramo, G., & D'Angelo, C. A. (2014). How do you define and measure research productivity? *Scientometrics*, 101(2), 1129-1144. Kluwer Academic Publishers.
2. Alimi, B. G. and Ifah, S. S. (2012). The Effects of Managerial Skills on Staff Efficiency and Effectiveness in Organizations. *Journal of Management and Corporate Governance*, 4: 58-71.
3. Arasinah K, Amarumi A, Bushra L.I, Normah Z and Faizal A. N.Y. (2017). "Integration of Green Skills in Sustainable Development in Technical and Vocational Education." *International Journal of Engineering Research and Applications (IJERA)*, vol. 07, no. 12, pp. 08-12.
4. Arifin K (2019). Factors Influencing Employee Attitudes toward Organizational Change: Literature Review. *Advances in Social Science, Education, and Humanities Research*, volume 395.
5. Bhuvaneshwara L. G (2012). Employee Attitudes and Job Satisfaction. Department of Education and Education Technology, School of Social Sciences, University of Hyderabad.
6. Blau, P. M. (1964). *Exchange and Power in Social Life*, New York: Wiley.

7. Bode, B. B. (2020). A Review on the Influence of Managerial Skills of Managers on Performance of Corporate Organizations in Nigeria. *International Journal of Management Science and Entrepreneurship* Published by Cambridge Research and Publications, 19(7): 196-208.
8. Bouckenoghe, D. (2009). Change recipients' attitudes toward change: A review study. *Vlerick Leuven Gent Working Paper Series*, 1–35.
9. Cascio W. F. (1992). *Managing Human Resources: Productivity, Quality of Work Life, Profits. Business & Economics* - 680 pages.
10. CEDEFOP (2012). *Green skills and environmental awareness in vocational education and training: Synthesis Report*. Luxembourg: Publications Office of the European Union.
11. Cropanzano, R., & Mitchell, M.S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, 31: 874-900.
12. ECORYS Environment and labor force skills: Overview of the links between the skills profile of the labor force and environmental factors, 2008, see [http://ec.europa.eu/environment/enveco/industry\\_employment/pdf/labor\\_force.pdf](http://ec.europa.eu/environment/enveco/industry_employment/pdf/labor_force.pdf).
13. Emerson, R. M., (1976). Social Exchange Theory. *Annual Review of Sociology*, 2: 335-362.
14. Gomathy C.K (2022). Effects of Employees' Attitude to Work on Productivity. *International Journal of Scientific Research in Engineering and Management (IJSREM)* Volume: 06 Issue: 02.
15. Ighelogbo, M. F (2016). "The impact of skills management on business performance". *Skills DB Pro*.
16. Kamal, G. (2012). Investigation of the Effect of Management Skills (Technical, Human and Cognitive) on Productivity of Human Resources in Iran. *World Applied Sciences Journal*, 20 (3): 476-480.
17. Katz, R.L. (1991). Skills of an effective administrator. *Business Classic fifteen key concepts for managerial success*. Harvard Business Review.
18. Katz J.A. (1995). *Managing Practitioners in the Entrepreneurship Class*. Sage Journal Publication.
19. Korman, A. R. (2010). The Prediction of Management Performance: A Review. *Personnel Psychology*, 23(2), 259 – 261.
20. Njururi E and Okech T. C (2016). Determinants of Employee Productivity in Kenya's Private Limited Companies in the Manufacturing Sector. *International Journal of Economics, Commerce and Management* Vol. IV, Issue 10.
21. OECD. (2001). *Measuring Productivity - OECD Manual: Measurement of Aggregate and Industry-level Productivity Growth*. *International Productivity Monitor*, 2(2), 1-154. Retrieved from <http://www.csls.ca/ipm/2/schreyer-e.pdf>.
22. Ochieng, M. M., & Okumu, O. (2023). Influence of Employee Attitudes on Employee Performance in Nzoia Sugar Company in Bungoma County, Kenya. *IJRDO - Journal of Business Management*, 9(7), 42-48.
23. Okwurume, C. N. (2023). Managerial Skills Development and Organizational Profitability of Multinational Companies in Rivers State. *International Academy Journal of Management, Marketing, and Entrepreneurial Studies*, 10(1): 16-32.
24. Olalekan S. O, Emmanuel E. C, Amah J (2023). The Effect of Technical Skills on Productivity Level of Cataloguers in Tertiary Institutions in Edo State, Nigeria. *Research and Analysis Journals* 6(02): 11-18.
25. Pavlova, M., (2015). Green Skills: Defining and Reorienting Competencies for Environmentally friendly practices. Symposium on the Inclusion of Green Competences in the Recognition of Prior Learning (26 August 2015). Accessed [Green%20Skills%20presentation%20Pavlova%20\(1\)](#).
26. Purcell J, Kinnie N, Hutchinson S, Raytonnd B and Swart B (2003). *Understanding the People and Performance Link*, Chartered Institute of Personnel and Development (CIPD): London.

27. Rogers, M. (1998). The definition and measurement of productivity. Parkville, Vic.: Melbourne Institute of Applied Economic and Social Research.
28. Singh, A., & R. P. Gupta. (2016). A research paper on the employee's attitude towards organizational change. *Journal of Dental and Medical Sciences*, 15(2), 44–47.
29. Vona F, Marin G, Consoli D and Popp D (2015). Green Skills. Working paper series (National Bureau of Economic Research).