

Green Disclosure and Employment Growth: Evidence From Nigerian Manufacturing Firms

Timothy Adisa SOETAN*, Olubisi Grace MAKINDE, Solomon Olusegun ADEOYE, Ijeoma Jacklin

OGUNDIWIN

School of Management Sciences, Babcock University, Ilishan Remo, Nigeria

soetant@babcock.edu.ng (Corresponding author)

Abstract. This study investigates the impact of green disclosure practices on total employment growth among 39 listed manufacturing companies in Nigeria from 2010 to 2019. Using multiple regression analysis, we examined the effects of environmental financial information, environmental non-financial information, and environmental performance information on employment growth. Results indicate that environmental financial information ($\beta = 0.053$, $p < 0.05$) and environmental non-financial information ($\beta = 0.113$, $p < 0.05$) have positive and significant effects on total employment growth, while environmental performance information shows a negative but insignificant effect. These findings contribute to the understanding of green disclosure impacts in developing economies and suggest that Nigerian manufacturing firms should prioritize environmental financial and non-financial disclosures to enhance employment growth. The study provides insights for policymakers and business leaders on leveraging green practices for economic development.

Contribution/Originality: To the best knowledge of the authors, this is the first research to establish a connection between the green disclosure practices of listed manufacturing companies in Nigeria and the total employment growth. In addition, the findings showed the interaction between green disclosure practices factors and total employment growth in listed manufacturing businesses in Nigeria are novel and significant.

Keywords: environmental financial information, environmental performance information, total employment growth, environmental nonfinancial information, Nigerian manufacturing companies, political economy theory, green disclosure practices

1. Introduction

Business organizations in the manufacturing and service industry need the help of the employees in producing the products or rendering services that the business organization will sell in the market (Okolie & Egbon, 2024; Mahssouni et al., 2022; Aguade et al., 2022). The employees get pay in return for the job they performed in the business organizations (Green & Heywood, 2023). The payment depends on the type of work that the employees are doing and agreement on how the payment should be made (Sorn et al., 2023; Salawu & Alfakoro, 2023). The employees are recruited by the business organization which is the employer. The employment can therefore be regarded as a relationship between two parties in form of contract. The employment can be full-time or part-time depending on what is agreed on during recruiting exercise. One party is the employee that is recruited by the second party which is the business organization that needs the service of the employee (Okolie & Egbon, 2024; Ismail, 2020). The employment then creates the employee-employer relationship which is normally guided by the labor law of various countries. The employer-employee relationship must be managed with care in order to produce the best labor productivity that will result in profitable businesses (Business Victoria, 2019).

The contract that regulates the employer-employee relationship is “terms of employment”. The terms of employment stipulate the prescription of the job to be done by the employees and the remuneration that will be paid for performing the job according to the job description. The terms of employment indicate the responsibilities of both the employees and the employers (Fulmer et al., 2023; Kopp, 2019). The compensation to be paid to the employees for the service rendered will also be included in the terms of employment. The employer and employee must agree on the contents in the terms of agreement before it can be regarded as valid terms of employment. The increment in the size of the employee of the business organization is an indication that such business organization is expanding. The increment in the size of the employees of the organization is associated with what Schreyer (2000) called high-growth firms. Environment is defined as the areas where the corporation is carrying out its business activities. The business activities of the corporation impact the environment negatively and this negative impact threatens the existence of the present and future generations (Jin et al., 2023). The corporation depends on the natural resources in its environment thus its survival and sustainability is also greatly dependent on its ability to take care of its environment. As the environmental issues have gotten the attention of the international community, corporations are required to report the impact of their business activities on the environment in their annual reports to the stakeholders (Coelho et al., 2023; Issa, et al., 2023; Jin, 2023). There has been pressure from the global community demanding inclusion of all stakeholders’ interest in the management decision making process. Those that can impact the business activities of the corporation or be impacted by the corporation’s business activities should be put into consideration during the decision making process (Hariyani et al., 2023; Suhanyi et al., 2023; Swain et al., 2017).

Environmental accounting is a subset of accounting that combines and presents both economic and environmental information in the corporate annual reports. It provides this information for the various organizational stakeholders to make informed business decisions in view of resources used and the associated cost. It is the business activities of the organization that handle the measurement and disclosure of corporate environmental performance to be used by its various stakeholders within and outside the business organization (Ogunode & Adegbe.2022; Stasiskiene, 2019).

The preparation and reporting of the environmental information is voluntary in some countries and mandatory in other countries. The process of meeting the voluntary and mandatory disclosure of the environmental information by the corporation is known as environmental reporting or green disclosure practices. That is, green disclosure practices or environmental reporting is the means by which the corporation communicates the impact of its business activities on environment to its

stakeholders. Green disclosure practices mean communication of the corporation's business activities' impact on the environment to its stakeholders (Yeye & Egbunike, 2023; De Silva, 2008).

The efforts put into environmentally friendly business activities would encourage the business organizations to showcase their stance on environmental issues (D'Angelo et al., 2022). Corvine et al. (2020) posit that business organizations that take care of their employees in terms of health and safety would be motivated to disclose such positive environmental activities in their annual reports. Contrarily, business organizations that do not have positive environmental activities to report would not be excited to report negative environmental activities in their annual reports. While previous studies have examined green disclosure in developed economies, there is limited research on its impact on employment growth in developing countries, particularly in Africa. This study aims to address this gap by investigating:

1. The effect of environmental financial information on total employment growth
2. The impact of environmental non-financial information on total employment growth
3. The influence of environmental performance information on total employment growth in Nigerian manufacturing firms

2. Literature Review and Hypotheses Development

2.1. Environmental Financial Information and Total Employment Growth

If the company cannot improve its environmental efforts to meet customer demands, it will not be able to survive. According to Saufi et al. (2016), there is a proven correlation between environmentally conscious practices, often known as green growth, and long-term company viability. Maintaining a successful firm in any sector requires careful consideration of the natural resources on which it depends. One metric of a company's size is the size of its workers, which in turn reflects the development of the corporate organisation. Companies who care about the environment will be able to hire more people, while those that do not will have to slash their workforce. This is going to happen because non-sustainable businesses won't have enough customers to meet their demands. Companies risk running out of capital when they are unable to meet customer demand, which means they will have to hire additional people to handle the increased workload. Licht and Peters (2013) looked at sixteen (16) European nations to see how environmental innovation affected job development. A mix of environmentally conscious and less eco-conscious businesses, including service providers and manufacturers, make up the sample. Companies in the service and manufacturing sectors were both studied to see if environmental process innovation and environmental product innovation had a positive or negative impact on job growth. Their research showed that in the majority of the nations they looked at, employment increased for both environmentally friendly and non-green goods. It is also known that the manufacturing sector is the one that benefits most from eco-friendly goods, as opposed to the service industry. Neither environmental nor non-environmental process innovation has much of an impact on the expansion of manufacturing nor service jobs. Since it would be some time before businesses can recoup the costs of environmental innovation, they came to the conclusion that the government should provide them a tax advantage.

The results of the research by Dinca et al. (2019) are consistent with those of the study by Licht and Peters (2013). Though, the two studies indicated the importance of environmentally friendly business activities in the enhancement of the total employment growth of the manufacturing companies. However the research contexts are different. The first study used participants from sixteen (16) European countries while the second study used participants from only one country. In addition, there is also a difference in time horizon. The first study was carried out in 2013 while the second one was carried out in 2019. The alignment of the findings of the two studies may be due to the fact that the consumers are not only interested in buying products from the business organizations; they also want to know the process taken by the organizations in the production process.

Liu et al. (2017) evaluated the effect of implementing environmental regulation on job creation in the textile printing and dyeing industry in China. The study is carried out in two phases. First, the study established that the companies in the study actually implemented the environmental regulation with evidence to support the implementation of the regulation. Second, the study then determined the effect of the environmental regulation implementation on the job creation in the industry that participated in the study. The finding of the study revealed a significant negative effect of environmental activities on the number of employees added by the companies in the study. The study concluded that environmental activities of the Chinese companies in the textile production and dyeing industry have negative effect on employment growth. The issue surrounding the implication of corporate environmental activities on the job creation has been widely researched and the results of the previous findings are mixed with some negative employment growth and others with positive employment growth. In the same reasoning, Jacob et al. (2015) studied various researches that have been carried out on the effect of corporate environmental activities on employment. Though their findings indicated both positive and negative employment growth, however, they indicated that most of the results showed positive employment growth. They concluded that engaging in corporate environmental activities tend to result in positive employment growth in a long term. Based on the above assertion, the following hypothesis was derived.

H₀₁: Environmental Financial Information has no significant effect on the total employment growth of the Nigerian-listed manufacturing companies

2.2. Environmental Nonfinancial Information and Total Employment Growth

While most of the findings of the studies examined by Jacob et al. (2015) indicated significant effect of the environmental reporting on the employment growth, Liu et al. (2017) did not see negative effect of environmental reporting on the employment growth of the business organizations. Cecere and Mazzanti (2015) conducted their own research to see how environmental initiatives impacted the expansion of job opportunities in European businesses. Based on responses from 9,237 businesses, the research analysed data from the Eurobarometer survey. Statistical methods for both descriptive and regression analysis were used to examine the data. Environmentally friendly goods and services were associated with an increase in employment for the businesses that took part in the survey, according to the results. When businesses use green technology to make and process goods and services, they open the door for more people to work for them. Therefore, as a result of implementing environmental innovation, this procedure would increase the number of people that organisations require. Based on the firms analysed, the innovative environmental process had less of an impact on job creation than creative environmental goods, according to the study's conclusion. Consistent with the results of Cecere and Mazzanti (2015), Cao et al. (2017) found that environmental initiatives undertaken by corporations boost employment. That is, more people are able to find work as a consequence of efforts to adhere to environmental standards and regulations. Indirectly, the research found that environmental norms and regulations lead to job creation. In order to meet the requirements of the environmental laws, the enterprises will have to rearrange their operations. In turn, this approach will open doors for other job opportunities. Directly and indirectly, the study found that using environmentally friendly production processes increases the likelihood of hiring more people. Environmental policy has become an integral part of the business strategies of companies all over the globe. There is some debate about whether businesses' environmental expenditure was a consequence of their need to comply with environmental laws or their desire to participate voluntarily in environmental initiatives. Regarding this matter, two distinct schools of thinking exist. One school of thought is that environmental costs drive up manufacturing costs, which in turn drives up product prices and dampens consumer demand. That the firms' workforces would shrink in response to falling product demand was a central tenet of this school of thinking. Spending on environmental protection, however, is seen by some as an investment that, in turn, generates employment opportunities. The authors Russ and Schaeffer investigated the question of whether environmental initiatives by

corporations led to a decline or an increase in employment (2017). Research on the effects of environmental legislation on employment, both positive and negative, was reviewed by Russ and Schaeffer (2017). In their investigation, they examined three different kinds of research. Researchers began by reviewing the literature on the topic of negative job growth as a result of environmental laws and regulations implemented by businesses. Secondly, they reviewed the research that examined the correlation between environmental actions and an increase in employment. Thirdly, research on the effects of environmental initiatives on employment was also reviewed, including both good and negative outcomes. Corporate environmental initiatives significantly and positively impact employment development, according to their study's findings. Corporations may increase their employment prospects as a result of investments in environmental initiatives and reporting on these initiatives in corporate annual reports. The research found that certain industries may see a decrease in employment opportunities as a result of environmental laws and regulations, while other industries actually see an increase. Environmental standards and regulations, they said, would create many more jobs than they would eliminate. Additionally, they said that corporations benefit society, the economy, and the environment when they participate in environmental initiatives. Based on the above discussion, the following hypothesis was postulated;

H₀₂: Environmental Nonfinancial Information has no significant effect on the total employment growth of the Nigerian-listed manufacturing companies

2.3. Environmental Performance Information and Total Employment Growth

Consistent with the findings of Russ and Schaeffer (2017), ECORYS (2012) found that environmental reporting significantly contributed to the expansion of commercial organisations' workforces. The worldwide business community is actively seeking recyclable materials and natural resources as a response to the environmental effect of corporate business operations. To stop the continued depletion of natural resources and contamination of water, air, and land, the international business community is being pushed to be creative in how it uses these resources. As a way to lessen the environmental effect of corporate business operations, eco-friendly products and processes have been suggested. Some are wary of the plan since they don't know how creative environmental manufacturing and procedure will affect job creation. Researchers at ECORYS (2012) sought to answer this question by examining how environmentally friendly products and processes affected job growth in EU enterprises. Employment in the area increased as a consequence of the European Union's energy efficiency regulations. The organization's resource efficiency has been greatly improved after switching from fossil fuels to renewable energy. Because of this, the businesses that were part of the study have been able to grow their operations, which has opened up additional job opportunities. Environmentally friendly products and processes are beneficial for businesses, according to the report, since they provide a competitive edge.

A meta-analysis of the effects of green technology adoption on job growth across continents was conducted by Bowen and Kuralbayeva (2015). Two stages of the investigation were conducted. As a preliminary step, they examined how current businesses that provide eco-friendly goods and services are affecting employee turnover. Last but not least, they looked at the jobs made possible by businesses that reduced their environmental impact by using eco-friendly technology. Implementation of environmental norms and regulations was shown to have a beneficial influence on job growth, according to the study's findings. Because of these inherent differences in global development, the research also found that the consequences of enforcing environmental laws and regulations vary across industrialised and developing countries. One of the benefits of participating in environmentally friendly industrial processes and services, according to the research, is the creation of jobs. Triaguero et al. (2017) also found that environmental technology is relevant to job development. For this study, they looked at 6,129 Spanish companies to see what effect environmental initiatives had on job creation. The majority of the enterprises are not environmental innovators, with 2,892 being environmental pioneers and 3,237 being non-environmental pioneers. A descriptive and regression

statistical approach was used to analyse the acquired data. Environmental innovation positively affects job growth, according to the study's findings. Additionally, they contrasted environmentally conscious creative businesses with their non-green counterparts. Environmentally innovative enterprises outperform non-environmentally innovative firms in terms of job growth, according to the result. According to their findings, authorities should enact rules that promote environmental innovation among businesses since it benefits both the environment and the bottom line. While the second research focused on a single nation, the first one extended across many continents. According to the two studies, environmental initiatives have a significant effect on the expansion of industrial enterprises' workforces. Based on the authors mentioned above and literature review, the following null hypotheses were formed for this study:

H₀₃: Environmental Performance Information has no significant effect on the total employment growth of the Nigerian listed manufacturing companies

3. Theoretical Framework

3.1. Political Economy Theory

William Stanley Jevons propounded political economy theory in 1871 (Jevons, 1871). Political economy is the study of how production works in the capitalist, socialist, and communist countries. It studies the relationship that exists between the production system and law, government and customs. It is the combination of politics and economics as it studies both the politics and the economy of a nation. The political economy theory studies the production process from the beginning to the end. That is, it studies how goods are produced, distribution of the goods, consumption of the goods and services, and effective management of the goods from the production to the final consumption. The political economy theory depends on the disciplines of economics, law, political science, sociology, and history to analyze the politico-economic behavior of a nation (Aizenman & Ito, 2020; Kuzemko et al., Lawrence, & Watson, 2019; Mahmood et al., 2019).

Timimi (2011) argues that effective implementation of the international political economy theory may result in the elimination of the contentious issues such as environmental degradation, AIDS control, and immigration. He called political economy theory a comprehensive theory that can be used to combat many contentious issues globally. Applying the political economy theory, Hatfield and Miquel (2008) used tax competition among the states in the nation to gauge the voters' preference on whether they will accept high tax and high redistribution of goods by the central government or accepting partial decentralization of authority. Voters tend to opt for the decentralization of the redistribution of public goods over the centralization of the redistribution of public goods.

Political economy theory is relevant to the green disclosure practices and total employment growth as this theory addresses the issues associated with production from the beginning to the final consumption. The production activities of the business organization have impact on the environment and the growth of the manufacturing company depends on its ability to take care of the environment in which it operates.

4. Methods

Ex post facto research design was used for this study. This research design was chosen because the study used secondary data which is appropriate to be used when data that have been collected for other purposes were used in a study. This research design enhances the reliability of data used in the study as these data must have gone through reliability and validity tests. This research design also enhances the reliability of the research findings as it is difficult, if not impossible; for the researcher to manipulate the independent variables in the study. The population for this study was the forty nine (39) manufacturing companies listed on the Nigerian Stock Exchange (NSE) as at December 31, 2019 (NSE, 2019) and these manufacturing companies must have been consistently listed on NSE for years covered in the study. The sample size for this study is thirty nine (39) manufacturing companies listed

on the NSE for the ten years period covered in this study. The 39 companies were selected based on consistent listing on the Nigerian Stock Exchange throughout the study period and availability of complete data. Green disclosure practices were measured using a content analysis approach, with a scoring system based on the Global Reporting Initiative guidelines.

Convenience sampling technique was used in the study in order to focus on those listed manufacturing companies with complete data for the period covered in this study. The thirty nine (39) manufacturing companies sample size and ten years covered in this study made it possible to calculate all values from the 390-firms-year observations. The secondary data used in this study were sourced from annual reports and accounts of the sampled listed Nigerian manufacturing companies. These annual reports have gone through certification by the internal auditor and audit committee of the board of directors of the companies that participated in the study as well external auditors for reliability and validity of the data used in the study. Inferential statistics specifically multiple regression statistical technique was used in analyzing the collected data. The choice of multiple regression was anchored on the fact that it was envisaged that the independent variables will reveal a better interaction with the total employment. Environmental Financial Information was measured using scoring system of 0 to 4 where 0 will be assigned for non-disclosure and 4 for quantitative monetary disclosure. Environmental Non-financial Information was measured by employing scoring system of 0 to 4 where 0 will be assigned for non-disclosure and 4 for quantitative monetary disclosure. Environmental Performance Information was measured using Scoring system of 0 to 4 where 0 will be assigned for non-disclosure and 4 for quantitative monetary disclosure.

4.1. Model Specification

The models specified for this study are as follow

$$TEG_{it} = f(EFI_{it}, ENFI_{it}, EPI_{it})$$

$$TEG_{it} = \beta_0 + \beta_1 EFI_{it} + \beta_2 ENFI_{it} + \beta_3 EPI_{it} + \mu_{it}$$

Where:

TEG = Total Employment Growth

EFI = Environmental Financial Information

ENFI = Environmental Nonfinancial Information

EPI = Environmental Performance Information

β_0 is a constant

$\beta_1, \beta_2, \beta_3$, are coefficient estimators

μ is the error term

Table 1: Correlation Matrix of Green Disclosure Practices and Total Employment Growth

Variables	TEG	EFI	ENFI	EPI
TEG	1.000			
EFI	0.177	1.000		
ENFI	0.150	0.816	1.000	
EPI	0.136	0.843	0.849	1.000

Notes: Table 1 shows the correlation coefficient of the variables. The dependent variable is Total Employment Growth (TEG). The explanatory variables are Environmental Financial Information (EFI), Environmental Non-Financial Information (ENFI) and Environmental Performance Information (EPI). The correlations are below the major diagonal and the bold coefficients denotes statistical significant at 1 and 5 per cent level. All the values were calculated from the 390 firms-year observations for thirty-nine listed manufacturing firms in Nigeria. The estimation process was facilitated using E-views 10.

Table 2: Descriptive Statistics of Green Disclosure Practices and Total Employment Growth

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Obs
TEG	0.166	-0.828	233.765	-86.364	23.227	390
EFI	0.808	0.000	5.000	0.000	1.747	390
ENFI	8.682	6.000	24.000	1.000	5.902	390
EPI	18.244	13.000	48.000	8.000	10.229	390

Notes: Table 2 shows the mean, median, maximum, minimum, standard deviation of the variables. The dependent variable is Total Employment Growth (TEG). The explanatory variables are Environmental Financial Information (EFI), Environmental Non-Financial Information (ENFI) and Environmental Performance Information (EPI).

Table 3: Data Treatment

Panel Diagnostic Test					
Adjusted R ²		0.331	0.377	0.361	0.361
F-test		81.951(0.00)	-	79.566(0.00)	-
Wald Test		-	86.35(0.00)	-	36.25(0.00)
Hausman Test		-	-	0.34(0.952)	-
Bresuch-Pagan RE Test		-	599.62(0.00)	-	-
Heteroscedasticity Test		-	-	26.881(0.00)	-
Pesaran CSID		-	-	-0.014(0.99)	-
Serial Correlation Test		-	-	646.55(0.00)	-
Observations		390	390	390	390

The diagnostic test in Table 3 was conducted to assess the model compliance to the regression assumption and establish if there is a single observation that the model is not well represented. The findings revealed that all the measures meet the thresholds of the data treatment assumptions.

Table 4: Green Disclosure Practices and Total Employment Growth

Dependent Variable: TEG

Variables	Pooled OLS	Random Effect	Fixed Effect	FGLS
Coefficient –EFI	0.038	0.053***	0.034	0.020*
Standard Error	(0.027)	(0.016)	(0.060)	(0.011)
T-test	1.417	3.313	0.564	1.771
Probability Value	0.157	0.000	0.573	0.077
Coefficient –ENFI	0.050	0.113***	0.184	0.117*
Standard Error	(0.122)	(0.032)	(0.247)	(0.064)
T-test	0.414	3.531	0.744	1.83
Probability Value	0.679	0.000	0.457	0.067
Coefficient –EPI	-0.013	-0.017	-0.083	-0.103
Standard Error	(0.256)	(0.409)	(0.524)	(0.085)
T-test	-0.051	-0.042	-0.158	-1.210
Probability Value	0.960	0.967	0.875	0.226
Coefficient –Constant	2.674***	2.735***	2.871***	2.879***
Standard Error	(0.258)	(0.452)	(0.611)	(0.101)
T-test	10.361	6.045	4.697	28.382
Probability Value	0.000	0.000	0.000	0.000

Notes: Table 4 reports Pooled OLS, fixed effects, random effects and Feasible GLS regression results of the effects of green disclosure practices on total employment growth of listed manufacturing companies in Nigeria. The dependent variable is Total Employment Growth (TEG). The explanatory variables are Environmental Financial Information (EFI), Environmental Nonfinancial Information (ENFI) and Environmental Performance Information (EPI). The standard error value is in parentheses. * Significant at 10%, ** Significant at 5%, *** Significant at 1%.

Source: Researcher's Computation (2024)

5. Results

5.1. Interpretation

$$\begin{aligned} \text{TEG}_{it} &= \beta_0 + \beta_1\text{EFI}_{it} + \beta_2\text{ENFI}_{it} + \beta_3\text{EPI}_{it} + \mu_i \\ \text{TEG}_{it} &= 2.735 + 0.053\text{EFI}_{it} + 0.113\text{ENFI}_{it} - 0.017\text{EPI}_{it} \\ \text{T-Test} &= 6.045 \quad 3.313 \quad 3.531 \quad -0.042 \end{aligned}$$

Listed Nigerian manufacturing businesses' overall employment increase as a consequence of green disclosure practices is shown in Table 1 of the findings of a regression study. Environmental financial information ($\beta = 0.053$, $p < 0.05$) and environmental non-financial information ($\beta = 0.113$, $p < 0.05$) had positive and significant effects on total employment growth. This suggests that for every unit increase in environmental financial information disclosure, total employment growth increases by 5.3%, while a unit increase in non-financial information disclosure is associated with an 11.3% increase in employment growth.

The findings reveal that among listed Nigerian manufacturing businesses, environmental performance information has a negative impact on overall employment growth, although environmental non-financial and financial environmental information have a favourable effect. Furthermore, there is proof that the environmental financial information (EFI= 0.053, t-test= 3.313, $p < 0.05$) and environmental non-financial information (ENFI= 0.113, t-test= 3.531, $p < 0.05$) significantly impact the overall employment growth of listed manufacturing companies in Nigeria. This suggests that environmental financial and non-financial data have a substantial role in determining how listed Nigerian manufacturing businesses' overall employment growth rates fluctuate over time.

On the other hand, EPI = -0.017, t-test= -0.042, $p > 0.05$ suggests that listed Nigerian manufacturing businesses' overall employment growth is unaffected by environmental performance information. What this means is that the overall employment growth of listed manufacturing businesses in Nigeria is not significantly impacted by environmental performance information. When it comes to the size of the estimated parameters for the regression analysis's coefficients, listed Nigerian manufacturing businesses total employment growth will be 0.053 percent higher for environmental non-financial information and 0.113 percent higher for environmental financial information for every unit increase in these variables, while the overall workforce growth of these companies will be 0.0117 percent lower for every unit increase in environmental sustainability information.

Listed manufacturing companies in Nigeria account for 38% of the total employment growth, according to the Adjusted R2 (which measures the proportion of changes in total employment growth caused by changes in environmental financial information, environmental non-financial information, and environmental performance information). The remaining 62% of the change in total employment growth is attributable to other factors that were not taken into account by the model.

The model's statistical significance demonstrated that the null hypothesis that green disclosure practices do not significantly impact the total employment growth of Nigerian listed manufacturing companies was rejected, as indicated by the statistically significant Wald Test of 86.35 with $p < 0.05$. This finding lends credence to the null hypothesis that listed Nigerian manufacturing businesses' green disclosure procedures do not significantly impact their overall employment increase.

6. Discussion of Findings

The findings in Table 4 indicate that environmental, financial information and environmental non-financial information have positive effects on total employment growth in the listed manufacturing companies in Nigeria. Contrarily, environmental performance information has negative insignificant effect on total employment growth in the listed manufacturing companies in Nigeria. Environmental financial information and non-financial information have significant positive effects on total employment growth in the listed manufacturing companies in Nigeria. Based on the findings in Table 4, the listed manufacturing companies in Nigeria that need to grow their employment must take environmental financial information and environmental non-financial information into consideration during the decision making process.

Ability of the business organizations to engage in positive environmental financial and environmental non-financial business activities stands a better chance of growing their total employment. Conversely, the findings also indicate that engaging in positive environmental performance activities does not translate to total employment growth. Engaging in this type of environmental activities would actually result in negative total employment growth rather than positive total employment growth. Though, the negative effect of environmental performance information on total employment is not significant. However, the inverse relationship between environmental performance information and total employment growth is an indication that investment in environmental performance activities would reduce the number of employees in the organization rather than increasing it.

Though, the findings in Table 4 indicate that management of the business organization should focus on environmental financial information and environmental non-financial information when making business decision relating to growing of its total employees. Notwithstanding, the fact that the measures of green disclosure practices (environmental financial information, environmental non-financial information, and environmental performance information) have significant effect on total employment growth must be considered. The significance of combined measures of green disclosure practices means the organizational management needs these three measures of green disclosure practices during the decision making process. The business organization that wants to enhance and grow its total employment must take the combined measures of green disclosure practices into consideration during the decision making process.

The environmental performance information, despite its inverse effect on total employment growth; when combined with environmental financial information and environmental non-financial information would result in increment in total employment of the business organization. The negative effect of environmental performance activities on total employment growth may be due to the fact that most business organizations are not willing or are reluctant to invest in environmental performance activities. Investment in environmental performance activities is capital intensive. Therefore, companies may not be willing to commit a huge amount of money to environmental performance activities. It takes time before business organizations can get the benefits from their investment in the environmental performance activities. This is due to the lag time between the period when business organizations invest in environmental performance activities and when this information is communicated to the market.

Conceptually, total employment growth is consistent growing in the number of employees of the business organization for a long period of time. It represents consistent increment in the payroll of the business organization from one period to the other. The growth in the number of the employees of the business organization indicates the expansion of business activities of such organization. The number of employees of the business organization is one of the good measures of corporate growth. The business organization can add to its existing number of employees only if there is increment in the

demand for the goods and services of such business entity. This means that the business organization that increases its number of employees is producing the goods and services that the consumers want. This can happen when its products and production process align with the expectations of various stakeholders, especially the consumers.

The significant effects of green disclosure practices on total employment growth support the organizational stakeholders' demand for environmental-friendly business activities from business organization. The environmentally sensitive business organizations stand better chance to grow their total employment than environmentally insensitive business organization. The business organization that wants to increase its total employment needs to take environmental issues very serious. The type of environmental activities engagement that the business organizations chose determine whether their total employment would grow or not.

The findings in Table 4 support the political economy theory. The business organization that know the politics and economics of its environment when it comes to production process and takes care of its environment when it comes to the environmental issues would see increment in their total employment. The total employment of the business organization can only grow when the various organizational stakeholders believe that their interest regarding the environmental issues has been taken care of. Thus the environmental insensitive business organizations would find it difficult to grow their total employment.

The findings of Saufi et al.'s (2016) study are in consonance with the findings in Table 4. Their findings indicate positive effect of environmental activities of business organization on total employment growth. They indicate that the business organization that wants to grow its total employment must take care of the environment in which it operates its business activities. The environmentally friendly business organizations would be able to increase their total employment growth while the environmentally unfriendly business organizations would find it difficult to increase their total employment growth. The findings in Table 1 align with the finding of Licht and Peters' (2013) study. Their study established positive effect of environmentally friendly products on employment growth. The total business organizations that produce environmentally friendly products witness growth in their total employment. They also indicate that the growth in the total employment is more visible in the manufacturing sector than the service sector.

The findings of the study of Dinca et al. (2019) are in line with the findings in Table 4. Their findings establish significant relationship between the environmental information disclosure and employment growth. They indicate that the number of employees in the business organization is a major factor in the disclosure of environmental information in the annual reports. The large business organizations that consistently grow their number of employees are expected to engage in positive environmental business activities and report them in their annual reports. The smaller companies with smaller number of employees are not expected to report elaborate environmental information in their annual reports. The finding of the study of Liu et al. (2017) is contrary to the findings in Table 4. Their finding indicates negative significant effect of environmental activities on the number of employees added by the business organizations. Their study indicates that engagement in positive environmental business activities actually reduces the demand for more employees rather than increasing the demand for more employees.

The study of Jacob et al. (2015) corroborates the findings in Table 4. Their finding indicates that the business organizations that engage in environmental activities grow their number of employees. The positive employment growth of the business organizations is closely related to their engagement in environmental activities. The study of Cecere and Mazzanti (2015) supports the findings in Table 4. The finding of their study established positive relationship between environmentally friendly products and services and employment growth. They indicated that introducing environmentally friendly technology in the production and process of products and services create opportunity for the business

organizations to grow their number of employment. The finding of the study of Cao et al. (2017) conforms to the findings in Table 1. Their finding confirms the positive effect of environmental activities on employment growth. They indicate that the environmental activities of the business organizations create job opportunity directly and indirectly. Introducing environmentally friendly products creates job opportunity directly. Complying with the environmental rules and regulations creates job opportunity indirectly. The business organizations need to reorganize their business activities in order to comply with the environmental rules and regulations and this process creates employment opportunity indirectly.

The findings of the study of Russ and Schaeffer (2017) align with the findings in Table 4. Their findings indicate positive significant effect of environmental activities on job creation. The business organizations that engage in the positive environmental business activities stand better chance of creating job opportunity. Their findings also indicate that spending on environmental activities should be regarded as investment and not expenses. The ECORYS' (2012) study conforms to the findings in this study. The study establishes positive relationship between environmental sensitive business organizations and positive total employment growth. The finding of the study indicates that the business organizations that change from fossil fuel to renewable energy create job opportunity. The job opportunity created is due to efficient use of input resources that results in expansion of business activities that requires service of more employees.

Bowen and Kuralbayeva's (2015) study corroborates the findings in Table 4. Their study establishes positive effect of environmental activities on employment growth. The business organizations that adopt environmentally friendly technology in their production process witness growth in their number of employees. The findings of Triaguero et al.'s (2017) study are in line with the findings of this study. Their finding establishes positive effect of environmental activities on employment growth. The finding of the study also indicates that environmental innovative business organizations have better employment growth than non-environmental innovative business organizations. Our finding that environmental performance information has a negative, albeit insignificant, effect on employment growth ($\beta = -0.017$, $p > 0.05$) contrasts with studies in developed economies (e.g., Cecere & Mazzanti, 2015). This may reflect the unique challenges faced by Nigerian manufacturers in balancing environmental performance with employment growth in a developing economy context. The implication of these findings is that management of the listed manufacturing companies in Nigeria must adopt green disclosure practices in order to grow total employment of the manufacturing companies. Engaging in environmentally friendly business activities is a prerequisite to have positive total employment growth. The findings of this study can also help the policy makers to develop policies that will promote environmental sensitive business environment.

7. Conclusion

This study contributes to the literature by demonstrating the positive impact of environmental financial and non-financial disclosure on employment growth in Nigerian manufacturing firms. Future research should examine these relationships longitudinally and explore potential moderating factors such as firm size or industry type. This study sheds more light on the factors of green disclosure practices influencing the total employment growth of the listed manufacturing companies in the Nigerian context. The awareness of the consumers on the activities of manufacturing companies and how these activities are affecting the environment in which the consumers are living has demanded from the organizations to engage in environmental-friendly business activities. Manufacturing companies that want to enhance their total employment growth need to engage in business activities that are causing minimum damages to the environment in which they operate and report such activities in their annual reports. This study examined the factors of the green disclosure practices affecting the total employment growth of the listed manufacturing companies in Nigeria. The findings of the study indicated that green disclosure practices have a positive significant effect on

the total employment growth of the manufacturing companies listed on the Nigerian Stock Exchange. This study concluded that green disclosure practices are significant factors to be considered by the manufacturing companies' management during decision making process in order to enhance the total employment growth of such companies.

8. Limitations and Direction for Future Research

The findings of this study are limited to the Nigerian manufacturing companies listed on the Nigerian Stock Exchange, and the results may differ in other developing and developed countries. The manufacturing companies listed on the Nigerian Stock Exchange are not the only manufacturing companies in Nigeria. There are other manufacturing companies that are operating in Nigeria which are not listed on the Nigerian Stock Exchange, hence; this study does not cover the manufacturing companies that are not listed on the Nigerian Stock Exchange. The future research could include non-listed manufacturing companies in Nigeria. The awareness of the consumers on the impact of the manufacturing companies in Nigeria may differ as compared to other countries. Therefore, future research may expand the research population beyond Nigerian manufacturing companies to enhance external validity of the findings. Lastly, this study focuses on the manufacturing companies in Nigeria, manufacturing companies are not the only companies impacting the environment negatively, future study can include other industries such as mining, telecommunication, and others.

9. Practical Implication of The Findings

The results of this study are relevant to the practitioners. The results shed more light on what the manufacturing companies that needs to enhance their total employment growth need to do. The findings of the study indicated that environmental financial information and environmental nonfinancial information are positive significant factors that influence and enhance the total employment growth employment of the manufacturing companies. This study provides empirical evidence for the relationship between green disclosure practices and total employment growth in Nigerian manufacturing firms. Our findings demonstrate that environmental financial and non-financial information disclosures positively impact employment growth, while environmental performance information does not significantly affect it. These results contribute to the literature on green practices in developing economies and extend the application of Political Economy Theory to the Nigerian context. The study has important implications for both theory and practice. Theoretically, it highlights the relevance of green disclosure in driving employment growth in a developing economy setting. Practically, it suggests that Nigerian manufacturing firms can enhance their employment growth by focusing on comprehensive environmental financial and non-financial disclosures. However, this study has limitations, including its focus on listed companies and the relatively small sample size. Future research should explore these relationships in non-listed companies, other industries, and over a longer time period. Additionally, investigating the mechanisms through which green disclosure practices influence employment growth could provide deeper insights. Despite these limitations, this study provides a foundation for understanding the role of green practices in driving employment growth in the Nigerian manufacturing sector. It underscores the importance of environmental responsibility not just for sustainability, but also for economic development in emerging markets.

References

- Aguade, A. E., Ayanaw, D., & Derso, E. A. (2022). Panel data analysis of profitability and employment growth of medium and large size industries in Ethiopia. *Heliyon* 8, 1-12. <https://doi.org/10.1016/j.heliyon.2022.e10859>
- Aizenman, J., & Ito, H. (2020), Global politics from the view of the political-economy trilemma. <https://voxeu.org/article/global-politics-view-political-economy-trilemma>.
- Bowen, A., & Kuralbayeva, K. (2015). Looking for green jobs: The impact of green growth on employment. http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/03/Looking-for-green-jobs_the-impact-of-green-growth-on-employment.pdf.
- Business Victoria. (2019). Employment types and hiring options: Easily compare your options for hiring staff. <https://www.business.vic.gov.au/hiring-and-managing-staff/employment-types>
- Cao, W., Wang, H., & Ying, H. (2017). The effect of environmental regulation on employment in resource-based areas of China - An empirical research based on the mediating effect model. *International Journal of Environmental Research and Public Health*, 14(1598), 1-11. <https://doi.org/10.3390/ijerph14121598>
- Cecere, G., & Mazzanti, M. (2015). Green jobs, innovation and environmentally oriented strategies in European SMEs. https://pdfs.semanticscholar.org/7bda/67cfb173c1446dec6a3fee5d7d249afa0d2c.pdf?_ga=2.7396539.867857595.1589371778-22739155.1580174292
- Coelho, R., Jayantilal, S., & Ferreira, J. J. (2023). The impact of social responsibility on corporate financial performance: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, 30, 1535-1560. <https://doi.org/10.1002/csr.2446>
- Corvine, A., Doni, F., & Martini, S. B. (2020). Corporate governance, integrated reporting and environmental disclosure: Evidence from the South African context. *Sustainability*, 12, 1-19. <https://doi.org/10.3390/su12124820>
- D'Angelo, V., Cappa, F., & Peruffo, E. (2022). Green manufacturing for sustainable development: The positive effects of green activities, green investments, and non-green products on economic performance. *Business Strategy and the Environment*, 32, 1900-1913. <https://doi.org/10.1002/bse.3226>
- De Silva, T. A. (2008). *Voluntary environmental reporting: The why, what and how*. (Doctoral thesis, Lincoln University, U.S.A). <https://core.ac.uk/download/pdf/35460138.pdf>.
- Dinca, M. S., Madaleno, M., Baba, M. C., & Dinca, G. (2019). Environmental information transparency – Evidence from Romanian companies. *Sustainability*, 11(5040), 1-22. <https://doi.org/10.3390/su11185040>
- ECORYS (2012). The number of jobs dependent on the environment and resource efficiency improvements. <https://ec.europa.eu/environment/enveco/jobs/pdf/jobs.pdf>.
- Fulmer, I. S., Gerhart, B., & Kim, J. H. (2023). Compensation and performance: A review and recommendations for the future. *Personnel Psychology*, 76, 687-718. <https://doi.org/10.1111/peps.12583>
- Green, C. P., & Heywood, J. S. (2023). Performance pay, work hours and employee health in the UK. *Labour Economics*, 84, 1-12. <https://doi.org/10.1016/j.labeco.2023.102387>
- Hariyani, D., Mishra, S., Hariyani, P., & Sharma, M. K. (2023). Drivers and motives for sustainable manufacturing system. *Innovation and Green Development*, 2, 1-20. <https://doi.org/10.1016/j.igd.2022.100031>

- Hatfield, J. W., & Miquel, G. P. (2008). A political economy theory of partial decentralization. Retrieved August 20, 2019 from <https://www.nber.org/papers/w14628.pdf>, <https://doi.org/10.1051/shsconf/20208601034>
- Ibrahim, O. S., & Abubakar. S. Y. A. (2023). Institutionalising the effects of remuneration and welfare packages on employees' performance in public universities in Nigeria. *Quest Journal of Management and Social Sciences*, 5(2), 132-147. <https://doi.org/10.3126/qjmss.v5i2.61030>
- Ismail, I. (2020). Remuneration and performance. *SHS Web of Conferences*, 86(01034), 1-7. <https://doi.org/10.1051/shsconf/20208601034>
- Issa, S. O., Kayode, A., & Alabi, A. T. (2023). The role of corporate sustainability disclosure in promoting firm value of listed manufacturing firms in Nigeria. *Proceedings of the 7 th Annual International Academic Conference on Accounting and Finance Disruptive Technology: Accounting Practices, Financial and Sustainability Reporting*
- Jacob, K., Quitzow, R., & Bär, H. (2015). Green jobs: Impacts of a green economy on employment. <https://www.researchgate.net/publication/273767132>
- Jevons, W. S. (1871). The theory of political economy. <https://oll.libertyfund.org/titles/jevons-the-theory-of-political-economy>.
- Jin, W., Xu, L., Wu, S., Xu, Y., & Han, S. (2023). Green development policies for China's manufacturing industry: Characteristics, evolution, and challenges. *Sustainability*, 15, 1-19. <https://doi.org/10.3390/su151310618>
- Kopp, C. M. (2019). Terms of employment. <https://www.investopedia.com/terms/t/terms-of-employment.asp>.
- Kuzemko, C., Lawrence, A., & Watson, M. (2019). New directions in the international political economy of energy. *Review of International Political Economy*, 26(4), 1-24. <https://doi.org/10.1080/09692290.2018.1553796>
- Licht, G., & Peters, B. (2013). The impact of green innovation on employment growth in Europe. https://www.econstor.eu/bitstream/10419/125705/1/WWWforEurope_WPS_no050_MS53.pdf.
- Liu, M., Shadbegian, R., & Zhang, B. (2017). Does environmental regulation affect labor demand in China? Evidence from the textile printing and dyeing industry. *Journal of Environmental Economics and Management*, 86, 277-294. <https://doi.org/10.1016/j.jeem.2017.05.008>
- Mahmood, Z., Kouser, R., & Masud, A. K. (2019). An emerging economy perspective on corporate sustainability reporting – Main actors' views on the current state of affairs in Pakistan. *Asian Journal of Sustainability and Social Responsibility*, 4(8), 1-31. <https://doi.org/10.1186/s41180-019-0027-5>
- Mahssouni, R., Touijer, M. N., & Makhrouf, M. (2022). Employee compensation, training and financial performance during the COVID-19 pandemic. *Journal of Risk and Financial Management*, 15, 1-19. <https://doi.org/10.3390/jrfm15120559>
- NSE (2019). Listed companies. <http://www.nse.com.ng/issuers/listed-securities/listed-companies>
- Ogunode, O. A., & Adegbe, F. F. (2022). Environmental disclosure practices and sustainable performance of quoted manufacturing companies in Nigeria. *Asian Journal of Economics, Business and Accounting*, 22(23), 455-469. <https://doi.org/10.9734/ajeba/2022/v22i23886>
- Okolie, U. C., & Egbon, T. N. (2024). Reward system and employee commitment: Evidence from Delta State Service commission, Asaba. *Perspektif*, 13(1), 273-284. <http://ojs.uma.ac.id/index.php/perspektif>

Russ, A., & Schaeffer, E. (2017). Don't believe the "job killer" hype <https://environmentalintegrity.org/wp-content/uploads/2017/01/Jobs-and-environment-report.pdf>.

Saufi, N. A. A., Daud, S., & Hassan, H. (2016). Green growth and corporate sustainability performance. *Procedia Economics and Finance*, 35, 374-378. [https://doi.org/10.1016/S2212-5671\(16\)00046-0](https://doi.org/10.1016/S2212-5671(16)00046-0)

Schreyer, P. (2000). High-growth firms and employment. <https://www.oecdilibrary.org/docserver/861275538813.pdf?expires=1574710119&id=id&accname=guest&checksum=22CCE2EEFC1893449283E70C80301CA1>.

Sorn, M. K., Fienena, A. R. L., Ali, Y., Rafay, M., & Fu, G. H. (2023). The effectiveness of ompensation in maintaining employee retention. *Open Access Library Journal*, 10, 1-14. <https://doi.org/10.4236/oalib.1110394>

Stasiskiene, Z. (2019). Environmental accounting: Concept, methodology, and application. https://doi.org/10.1007/978-3-319-71062-4_27-1.

Suhanyi, L., Suhanyiova, A., Kadarova, J., & Janekova, J. (2023). Relationships between average wages in the manufacturing sector and economic indicators of the manufacturing sector in the region of visegrad group countries. *Sustainability*, 15(4164), 1-19. <https://doi.org/10.3390/su15054164>

Swain, R. K., Kanungo, T., & Dash, S. R. (2017). Environmental disclosure practices in India: Evidence from top 50 companies of Bse. *IOSR Journal of Business and Management*, 19(9), 5-14.

Timimi, K. (2011). Political economy theory. <https://omy/political-econohttps://www.economywatch.com/political-econmy-theory.html>

Triaguero, A., Cuerva, M. C., & Alveraz-Aledo, C. (2017). Environmental innovation and employment: Drivers and synergies. *Sustainability*, 9(2057), 1-22. `

Yeye, O., & Egbunike, C. F. (2023). Environmental, social and governance (ESG) disclosure and firm value of manufacturing firms: The moderating role of profitability. *International Journal of financial, Accounting, and Management*, 5(3), 311-322. <https://doi.org/10.35912/ijfam.v5i3.1466>