

Environmental Disclosure Practices and Total Value-Added Growth: Evidence from Nigerian Listed Manufacturing Companies

Timothy Adisa Soetan, Powel Maxwell Worimegbe, Olubisi Grace Makinde, Abolade

Francis Akintola, Solomon Olusegun Adeoye

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

soetant@babcock.edu.ng (Corresponding Author)

Abstract. This study examines the impact of environmental disclosure practices dimension on total value-added growth of Nigerian listed manufacturing companies from 2010 to 2019. Using stakeholder and signaling theories as a framework, we analyse secondary data from 39 companies using regression. Our findings indicate that environmental financial information has a significant positive effect ($\beta = 0.104$, $p < 0.05$) on total value-added growth, while environmental non-financial information and environmental performance information show positive but non-significant effects. These results suggest that Nigerian manufacturing firms can enhance their value-added growth through comprehensive environmental disclosure practices, particularly financial information. This study contributes to the limited literature on environments disclosure and value creation in emerging markets, offering insights for both researcher and practitioners.

Originality/value: As far as the authors are aware, this is the first research to establish a connection between the environmental disclosure procedures of traded manufacturing businesses in Nigeria and the overall value-added increase. In addition, the findings showed the interaction between environmental disclosure practices factors on total value-added growth in listed manufacturing businesses in Nigeria are novel and significant.

Keywords: Total value-added growth, Environmental disclosure, Environmental accounting, Nigeria, Manufacturing companies, Stakeholder theory, Signalling theory

1. Introduction

A product or service is considered value-added if the firm invests in improving it before selling it to consumers (Orshi et al., 2022). Companies may increase their income and profits by attracting more consumers via the enhancement of their products or services (Offia et al., 2021). The experiences of emerging nations such as Nigeria that rely heavily on commodities as a source of income illustrate a common difficulty in developing nations: increasing domestic production capacity and adding value (Synder et al., 2020). Developed nations' commodity sectors are crucial to global trade integration, but in emerging countries such as Nigeria, commodity sectors are even more important (Akpan and Nkata, 2023). Nearly two-thirds of emerging nations rely on commodities exports. For these nations, the percentage of their overall export revenues that come from commodities is at least 60% (Onoh et al., 2022).

The manufacturing sector's average yearly growth rate since the COVID-19 pandemic recovery has been slow and feeble, coming in at 3.4% in 2021 and 2.5% in 2022. As a result, the industry's input to Nigeria's GDP has been significantly lower than what is required to be competitive on a global scale, averaging 10% for nearly twenty years (Onura et al., 2022). It is clearly essential to reevaluate growth strategies within the sector and address critical concerns because the Nigerian manufacturing sector has been hindered by increasing international and domestic challenges, leading to underperformance compared to other countries (Ukoh et al., 2024).

The manufacturing sector is vital to the growth of any economy. It is a potent factor that depends on the paths of development, efficiency, and competitiveness. The manufacturing sector's resilience and efficiency may have a significant impact on the overall economic development of a country. Manufacturing is crucial to building a more affluent economy, and we look at the many ways in which this is true (Olomu et al., 2020). Hence, there is a need to improve total value-added growth. Total value-added growth originates from the production process. Manufacturing companies acquire raw materials that they process and transform into finished products. The companies incurred costs in the process of procuring the raw materials that were processed and transformed into finished products by the employees. The finished products were expected to be sold to the consumers in the market. The difference between the cost incurred in procuring the raw materials that were turned into finished products and the market value of the finished products is termed value added. It is the measurement of the performance of the business organisations. It shows how the business organisations are doing, especially financially (Islam, 2019; Kenton, 2019).

Value added helps business organisations expand their business activities in terms of employing more workers and increasing market share, sales revenue, and profitability. It measures the net worth of the business organisation (Khan et al., 2021). Business organisations need to consistently improve the value they add in order to ensure their survival and long-term sustainability. The term value-added implies the amount by which the monetary worth of the information's final products exceeds their initial investment (Murshed et al., 2020). Value added is used to expand the business activities of the organisations, pay capital costs in terms of interest rate, and give dividends to shareholders, workers' salaries, and other stakeholders (Corporate Finance Institute, 2019).

The importance of value-added cannot be overemphasised as the business organisation's going concern will be at risk due to its inability to meet its obligations to stakeholders. Companies need to add value over a long period to be able to meet their obligations to their stakeholders. Value added is for all stakeholders such as the employee, loan providers, shareholders, community, and others. Value added is the wealth of the business organisation. It is the business organisation's wealth generation in terms of sales revenue minus the cost of production and wealth distribution to all parties, including shareholders, environment advocates, the community, the environment, the government, loan providers, and others (Francis, 2017).

Van Staden (2000) posits that the additional advantage created by the business organisation and its employees could be attributed to the value added. Value-added information provides stakeholders with

annual reports with non-financial and financial information, thus making it a useful decision-making tool for organisational management. The incorporation of social and environmental information in yearly reports helps the users of the annual reports to make informed business decisions in management. The value-added information is supported by social theories such as organisational political cost theory, social contract theory and legitimacy theory. The management can publish the information on value-added to limit the future expectations of all stakeholders from the company as the management has influence on the preparation and disclosure of such information.

The value generated by a company or other organisation's production resources and the subsequent distribution of that value to its stakeholders is defined by Ianniello (2010). Preparedness for social reporting, financial reporting and management control are the three characteristics he listed as characteristics of value-added information. The preparation of value-added information for management control is known as internal use, while financial reporting and social reporting are for external usage. The advantage of this is that it gives the users of the accounting information more information to make informed business decisions during the decision-making process. The disadvantage is the extra costs incurred in preparing the value-added information. Business organisations need to grow their value added in order to stay in business, and those that cannot do so risk the possibility of going out of business. Value-added growth of business organisations has been linked to their environmental activities and it is essential for business organisations that want to solve the problem of declining value-added to address the challenges of their environmental activities (Kassem et al., 2016). The study indicated that the value added of business organisations that cannot reduce their hazardous waste have seen their total value added negatively affected. The implication of this is that business organisations that cannot grow their value-added will not be able to maximise their shareholder wealth while meeting the needs of other stakeholders. These types of business organisations will not be able to compete in their industry, and as a result, they will be out of business.

Research in Nigeria has focused on the industrial industry, among others, to determine the interactions between environmental disclosure procedures and total value-added growth, hence created a gap to be filled in this study. This study aimed to address this gap in research by investigating the interactions between the aspects of environmental disclosure policies and the total value-added growth of listed manufacturing businesses in Nigeria. This research looked at the effect of environmental disclosure policies on overall value-added development of traded Nigerian manufacturing enterprises, all within the scope mentioned above. According to Adegbe et al. (2020), Nigerian food and beverage manufacturing businesses' share values are positively and significantly impacted by environmental accounting standards. If traded food and beverage firms in Nigeria were to engage in environmentally friendly initiatives, it would boost their share value, which in turn would increase the value of the company and its operations. What this means is that manufacturing company organisations may increase their worth by doing business in an eco-friendly way. The specific research objectives are to:

- i. Examine the effect of environmental financial information on total value-added growth of listed manufacturing businesses in Nigeria
- ii. Investigate the effect of environmental non-financial information on total value-added growth of listed manufacturing businesses in Nigeria
- iii. Assess the effect of environmental performance information on total value-added growth of listed manufacturing businesses in Nigeria

In line with the specific research objectives, the specific research questions are:

- i. What is the effect of environmental financial information on total value-added growth of listed manufacturing businesses in Nigeria?
- ii. How does environmental non-financial information affect total value-added growth of listed manufacturing businesses in Nigeria?

To what extent does environmental performance information affect total value-added growth of listed manufacturing businesses in Nigeria Ex post facto research design was used in the study with sample size of thirty nine (39) listed manufacturing companies in Nigeria. The data were sourced from the annual reports and accounts of the sampled listed Nigerian manufacturing companies.

This study has contributed to the body of knowledge by adding to the limited literature on the link between environmental disclosure practices dimensions and total value added growth. This study also presented the readers with more understanding of environmental disclosure practices dimensions and total value added growth. The study also contributed to the body of knowledge by formulated and tested hypotheses on how environmental disclosure practices dimensions can affect the total value added growth of the manufacturing companies in Nigeria.

The remaining paper is structured as follows: the literature review and hypotheses development take place in section two. Section three presents theoretical review and the research methodology takes place in section four. Section five presents results, interpretation, and discussion of the empirical findings. Section six presents concluding remarks. Finally, section seven presents limitations of the study

2. Literature Review and Hypotheses Development

2.1. Environmental Disclosure Practices Dimensions and Total Value Added Growth

Research by Zein et al. (2020) examined the relationship between ESG elements and the brand equity worth of American and European enterprises. With the use of Regression and paired-sample t-test statistical techniques, the data gathered over five (5) years, from 2013 to 2017, from 1,100 participating firms were evaluated. Environmental, social, and governance (ESG) aspects were shown to have a considerable impact on the value of the enterprises that were part of the research. Brand equity increases when ESG (environmental, social, and governance) ratings rise. So, the value that the company adds is due to ESG (environmental, social, and governance) considerations. Environmental, social, and governance aspects are what really make a difference to company organisations, according to the research. Corporate social responsibility (CSR) initiatives pay off for companies because customers are prepared to pay a premium for eco-friendly goods and services. Setyahuni and Handayani's (2020) study corroborates the study of Zein et al. (2020). Both studies indicated that environmental disclosure practices had favorable and statistically significant impact on the performance of the business entities. Specifically, companies that take part in eco-friendly initiatives and include them in their annual reports are more valuable to investors.

Oncioiu's (2020) study also proved that CSR (corporate social responsibility) leads to a rise in a company's worth which is also in line with the study of Utomo et al. (2020). The businesses' bottom lines would increase when they prioritised the well-being of the communities and ecosystems in which they worked. In the end, this would benefit the companies. An organisation's worth is directly proportional to the extent to which it engages in environmental initiatives. When companies do more to help the environment, it boosts their bottom line and makes them more valuable. These four studies' findings provide evidence that the value of the organisations increased when the all stakeholders were taken into consideration. However, these studies were not carried out in the manufacturing sector thus provided a gap that needs to be filled in this study.

The importance of environmental disclosure practices is presented in the studies of Oyedokun et al. (2019), Daferighe et al. (2019), and Bedenik and Barišić (2019). Both studies believed that environmental dimensions have significant role to play in the value creation of business entity. Though, Oyedokun et al. (2019) and Bedenik and Barišić (2019) found the positive significant effect of non-financial environmental dimension on the organizational value creation but Oyedokun et al. (2019) also found that financial information does not significantly affect the value of business organisations while performance environmental intelligence has a negative and substantial influence. However, the study of Daferighe et al. (2019) indicated that the level of engagement in environmentally sensitive business

activities by business organisations does not translate to the increment in their value. Despite the similarities and differences in the findings of their studies, the findings of the studies believed that engaging in positive environmental business activities may have a significant effect on the growth of the business organisation in the long run. The corporate annual reports that focus on maximising shareholders wealth without taking into consideration the needs of other stakeholders see short-term increment in their value. The corporate sustainable reports that include environmental and social information reporting will have long-term increment value or sustainable value added. The studies above did not cover the variables used in this study, therefore; there is a need to fill this gap.

The importance of environmental accounting in relation to sustainability reports made by corporations was investigated by Sekerez (2017) and Kassem et al. (2016). The long-term viability of companies is becoming a more divisive and complicated topic. The companies have to go up against other companies that operate in the same market. Organisations may struggle to stay competitive in today's dynamic marketplace if they are unable to provide tangible value to their customers and employees. Businesses are clearly trying to show their stakeholders where they stand on environmental concerns by publicising their green initiatives. Environmental concerns are now front-of-mind for people throughout the world, making it impossible for companies to turn a blind eye. Consumers will punish companies that disregard their requests for environmentally conscious items by not purchasing such products.

On one hand, Kassem et al. (2016) found that a rise in environmental activity metrics, such as hazardous waste, often has a negative effect on an organisation's value added. Without taking steps to lessen the environmental toll of its operations, the company will miss out on a chance to grow in value. It is inevitable that a company will go out of existence if it does not provide value to its customers. On the other hand, Sekerez (2017) indicated that, business organisations who take measures to mitigate the environmental impacts of their operations enjoy cost savings, improved reputation, and long-term sustainability, according to the study's findings. The research also found that the business entities benefited from these cost reductions and performance enhancements, which increased their value. The findings of both findings are pointing to the fact that environmentally friendly business activities and an increase in company value are positively related, according to the research. In order to increase the value and sustainability of corporate organisations, environmental initiatives are critical. These studies were carried out outside Nigeria thus created a gap to be filled in the Nigerian context.

In order to build good relationships with their many stakeholders, corporate entities should disclose their efforts to lessen the environmental effect of their operations. Annual reports cannot be relevant for decision-making without include both financial and non-financial environmental data. There is a connection between environmental indicators and the value that companies provide, as environmental indicators grew, it had a detrimental impact on the value added of commercial groups. That means there will be a rise in the value of companies that actively work to lessen the negative effects their operations have on the environment. A decline in value will befall the corporate organisation that has chosen to ignore the environmental effects of its operations. However, the findings of Van Staden (2000) differed from the findings of Sekerez (2017) and Kassem et al. (2016). Van Staden's (2000) findings indicated that engaging in environmentally friendly business activities does not result in adding value to the organization. The contradicting results from the above studies demand that more studies need to be done on environmental issue, therefore provide a gap that need to be filled in this study. Environmental, social, and sustainability reporting and its impact on company value was studied by Grey (2006). Secondary data with a geographic focus formed the basis of the research. The study's results suggested that environmental reporting could not always result in an increase in company worth. In his opinion, further measures are required to provide meaningful reporting that will boost the value for shareholders. The results of the research by Iredele and Opala (2018) are consistent with those of the study by Grey (2006). Iredele and Okpala (2018) looked at the correlation between environmental disclosure and stock price performance of Nigerian firms listed on the exchange. From 2011 to 2016, information was collected from a group of 80 firms that took part in the research. Listed firms' market value was

significantly impacted negatively by environmental disclosure, according to the study's findings. If this is the case, then the study's participating businesses will be losing money on environmental improvements. They blamed the lack of ethical investors in Nigeria for the outcome. They nevertheless came to the conclusion that Nigerian businesses should participate in environmental initiatives to lessen their impact on the environment, even if the research came to different conclusions. Members of the group also called on the government and accounting associations in Nigeria to encourage business participation in environmental causes.

Although the two researches, Grey (2006) and Iredele and Okpala (2018), had distinct methods of execution, they both came to the same conclusion. One major difference is the research designs used; one study relied on prior studies' data to draw conclusions, while the other utilised an ex post facto approach. Secondly, one study was carried out in an African setting, while the other was carried out in a European setting. Thirdly, one study was carried out in 2006 and the other in 2018, which is a significant difference in terms of timing. The fact that both studies found the same thing could be related to how much people throughout the world are starting to notice how corporate actions affect the natural world. The environmental problem was less divisive in 2006, when the first investigation was carried out. Hence, ethical investors aren't making much of a splash in Europe's corporate scene. Environmental issues were also not a problem in 2018, when the second research was carried out in Nigeria, unlike now. We are still in the early stages of environmental information dissemination.

The results of Iqbal et al. (2013) showed that the value of the firms was affected by environmental information sharing. Whether favourable or bad, the sharing of environmental information has an effect. Businesses see a positive effect on their value from positive environmental information, and a negative effect from bad environmental information. This means that the kind of environmental information stakeholders get determines how they react to the firms' disclosure. However, the study of Nurkumalasari et al. (2019) indicated that integrated reporting does not impact business value. The inclusion of both financial and non-financial information in annual reports is being advocated for by environmental information reporting and integrated reporting, while Nurkumalasari et al. (2019) and Iqbal et al. (2013) came to opposite conclusions. One research found that companies' worth improves when annual reports include both financial and non-financial information, whereas another study found the opposite to be true. Possible explanations for the discrepancy in findings include differences in study variables and methods. In both investigations, the dependent variable was Tobin's q formula. Two studies were conducted to assess the same independent variable; however, the first research utilised environmental indicators created by the Global Reporting Initiatives while the second study used metrics developed by the International Integrated Reporting Council. Furthermore, moderated regression analyses were employed in the second investigation, while partial least square was used in the first. Zhongfu et al. (2011) found that environmental information disclosure significantly improves the study's firms' economic performance, whereas EVA had no such impact. On the other hand, the findings of Wang's (2015) study contradict the findings of Zhongfu et al. (2011). Wang's (2015) found a negative correlation between the entire disclosure of environmental information and the value of the enterprise. The value of a company is positively correlated with the voluntary sharing of environmental information. There is an inverse link between the business worth and the required disclosure of environmental information, which may be attributable to the cost factors. Based on the literature reviewed in this study, the following null hypotheses were formulated:

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

H₀₂: Environmental Non-financial Information has no significant effect on the total value added growth of the Nigerian listed manufacturing companies

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

3. Theoretical Review

3.1. Stakeholder Theory and Signalling Theory

Stakeholder theory and signalling theory provide the most compelling explanations for the theoretical underpinnings of the environmental disclosure practices aspects and total value added growth. In 1984, Richard Edward Freeman put out stakeholder theory (Freeman, 2004). Management, according to stakeholder theory, should not prioritise the interests of shareholders above those of all other interested parties when making decisions. It is commonly known that shareholders own businesses. However, this theory argues that when making decisions, organisational management should also consider stakeholders, who can impact both the corporation's operations and those affected by them (Langrafe et al., 2020; Harrison et al., 2015). Since consumers and society at large are demanding that businesses account for the environmental damage their operations cause, decision-makers must take stakeholder interests into account (Boaventura et al., 2020; Freeman et al., 2018; Friedman & Miles, 2002). Businesses would be able to carry out their operations more smoothly if they adopted the tenets of stakeholder theory. Because of the delicate nature of manufacturing businesses' commercial operations, this would have a multiplicative effect on their overall value added growth.

The signalling idea was first out by Spence in 1973 (Spence, 1973). The problem of information asymmetry between management and organisational stakeholders is addressed by this approach. According to this school of thought, upper-level management has the best vantage point from which to report on how their company's actions affect Mother Earth. Hence, for the sake of making educated business choices, it is anticipated that management would provide the organisational stakeholders with the necessary environmental knowledge. Due to the controversial nature of environmental problems and the importance of environmental activities to overall value added development, signalling theory is applicable to this research (Mohamed et al., 2020; Simoni, & Bini et al., 2020; Levy & Lazarovich-Porat, 1995). How the company handles environmental issues is becoming a topic of discussion among the many interested parties. All stakeholders should get the message that the organisation's management is doing its part to protect the environment. According to Jolink & Niesten (2020), Mahmood et al. (2019), and Connelly et al. (2011), stakeholders, including investors, lenders, and consumers, may cut ties with a firm if its management sends a poor signal about its environmental activities.

4. Methods

4.1. Research Design

This study employed *ex post facto* research design. The goal of *ex post facto* design in this study is to establish a causal link between the variables in this study by analysing past events. As a variable cannot be changed, researchers are not compromising their morals or ethics by influencing a certain group. The *ex post facto* research design is used when dealing with a study that is using data that have been already collected not for the purpose of the present study. This research design is appropriate for this study as it allows the researcher to use reliable data that have gone through validity and reliability tests. This research design has been used in the similar previous studies by Yin et al. (2019), Oyedokun et al. (2019), Wahyuningrum and Budihardjo (2018), Ofoegbu and Odoemelam (2018) and Olasupo and Akinselure (2017) with good results. The research design is also chosen because it enhances the reliability of the study's findings as the researcher cannot manipulate the independent variables. In addition, *ex post facto* research design has been proven to be reliable in the study where experimental research design was not possible especially in the social science research (Giuffre, 1997).

4.2. Sample size and sampling Technique

The sample size for this study was thirty nine (39) listed manufacturing companies in Nigeria. The rationale for chosen the sample size for this study is based on the availability of the complete data for

the period covered in this study. This study employed convenience sample technique. The choice of convenience sampling technique was due to the availability of the data for some manufacturing companies listed on the Nigerian Stock Exchange while others did not have complete data. Though, convenience sampling has its limitations such as researcher bias that may choose the participants that are readily available to the researcher. This may make it difficult for the results of the study to be generalized or make it difficult for other researchers to replicate the same results. These limitations may not apply to this study because all listed Nigerian manufacturing companies with complete data for the years covered in this study were participants and other researchers can have access to the same data. The availability of data of the sampled listed manufacturing companies on the Nigerian Stock Exchange shed more light to what was actually happening in the Nigerian listed manufacturing companies.

The listed manufacturing companies on the floor of the Nigerian Stock Exchange (NSE) that were considered by the researchers in this present study were conglomerates (6), consumer goods companies (10), industrial goods companies (13), and (10) healthcare entities. These firms, irrespective of their sectors, are characterized by a production system, and a high level of adaptability is required so that they can meet the fluctuating demand for a variety of goods. Table 1 below shows the characteristics of the listed manufacturing companies used in this study.

Table 1: Characteristics of Manufacturing Companies used in this Study

Sector	Employees	Sales Range	Market Size	Year of Establishment of Companies
Conglomerates	1,046	US\$0.1trillion	US\$1.55billion	Since 1979
Consumer Goods	6,324	\$0.1trillion	\$41.7billion	Since 1983
Industrial	2,843	0.35bn	\$747million	Since 1980
Healthcare	400,000	\$1bn	\$0.1trillion	Since 1990

Source: Nigerian Stock Exchange (2019)

4.3 Method of Data Collection and Measurement of Variables

This study used secondary data. The secondary data were sourced from the annual reports and accounts of the sampled listed Nigerian manufacturing companies. Secondary data are considered to be appropriate for this study because all the constructs can be measured quantitatively and the figures of measurements are available. Also, secondary data have been used for this nature of study by past researchers such as Daferighe et al. (2019), Iredele (2020), Adegbe et al. (2020), Ogunode and Adegbe (2020), Chukwu et al. (2020), Tarus (2020) with good results.

The data collected were used to measure the variables in the study. The variables in the study were chosen for two significant reasons. First, environmental financial information, environmental non-financial information, and environmental performance information cover all aspects of environmental issues. Second, the total value-added growth is chosen because it represents the actual growth variable unlike other previous studies that normally used performance variables. Total value-added growth is measured by taking current total value-added minus previous total value-added and divides this by previous total value-added and then multiplies by 100 ($\text{Total Value-added growth} = \frac{\text{Current TVA} - \text{Previous TVA}}{\text{Previous TVA}} \times 100$). Environmental financial and non-financial information is measured by scoring system of 0 and 4 where 0 will be assigned for non-disclosure and 4 for quantitative monetary disclosure. Environmental performance information is measured by scoring system of 0 and 4 where 0 will be assigned for non-disclosure and 4 for quantitative monetary disclosure. The descriptive and inferential statistics methods were used to analyse the data collected while specifically panel regression analysis was used to test the three (3) hypotheses developed in this study. This statistical technique was used to determine the effect of environmental disclosure practices dimensions on total value-added growth of the Nigerian listed manufacturing companies.

4.4 Model Specification

The models specified for this study are as follow:

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

$$TVAG_{it} = \beta_0 + \beta_1 EFI_{it} + \beta_2 ENFI_{it} + \beta_3 EPI_{it} + \mu_i$$

Where:

TVAG = Total Value Added Growth

EFI = Environmental Financial Information

ENFI = Environmental Non-financial Information

EPI = Environmental Performance Information

β_0 is a constant

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

μ is the error term

5. Results

Table 2: Descriptive Statistics of Environmental Disclosure Practices Dimensions and Total Value-Added Growth

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Obs
TVAG	26.984	9.265	1258.824	-260.795	116.462	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 Value-Added Growth (TVAG). The independent variables are Environmental Financial Information (EFI), Environmental Non-Financial Information (ENFI) and Environmental Performance Information (EPI). 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
Source: Researcher's Computation (2024)

5.1 Descriptive Statistics Interpretation

TVAG: The mean value of the total value-added growth is 26.98 with a median of 9.27. In addition, it shows that the maximum value is 1258.82 and the minimum value -260.80. This implies that the total value-added growth of the listed manufacturing in Nigeria differ across time period. The standard deviation of 116.46; shows that the total value-added growth of listed manufacturing companies in Nigeria is susceptible to change.

EFI: The mean value of the environmental financial information is 0.81 with zero median. This implies that the average level of environmental financial information of the listed manufacturing companies in Nigeria increase over time. The maximum value of 5.00 and the minimum value 0.00, show that listed manufacturing companies in Nigeria have different environmental financial information. The standard deviation of 1.75; shows that the environmental financial information of listed manufacturing companies in Nigeria is susceptible to change.

ENFI: The mean value of the environmental non-financial information is 8.68 with a median of 6.00. This implies that the average level of environmental non-financial information of the selected

manufacturing firms in Nigeria increase over time. The maximum value of 24.00 and the minimum value 1.00, show that listed manufacturing companies in Nigeria have different environmental non-financial information. The standard deviation of 5.90; shows that the environmental non-financial information of listed manufacturing companies in Nigeria is susceptible to change.

EPI: The mean value of the environmental performance information is 18.24 with a median of 13.00. This implies that the average level of environmental performance information of the selected manufacturing companies in Nigeria increase over time. The maximum value of 48.00 and the minimum value 8.00, show that manufacturing firms in Nigeria have different environmental performance information. The standard deviation of 10.23; shows that the environmental performance information of the listed manufacturing companies in Nigeria is susceptible to change.

Table 3: Regression Results of Environmental Disclosure Practices Dimensions and Total Value-Added Growth

Dependent Variable: TVAG				
Variables	Pooled OLS	Random Effect	Fixed Effect	FGLS
Coefficient –EFI	0.087	0.104***	0.130	0.048*
Standard Error	(0.053)	(0.021)	(0.118)	(0.027)
T-test	1.636	4.952	1.104	1.787
Probability Value	0.103	0.000	0.270	0.074
Coefficient –ENFI	0.109	0.202	0.453	0.182
Standard Error	(0.242)	(0.380)	(0.484)	(0.146)
T-test	0.452	0.531	0.937	1.250
Probability Value	0.652	0.595	0.349	0.211
Coefficient –EPI	-0.011	0.051	-0.147	0.200
Standard Error	(0.510)	(0.809)	(1.027)	(0.239)
T-test	0.021	0.064	-0.143	0.837
Probability Value	0.983	0.949	0.886	0.403
Coefficient –Constant	6.191***	6.358***	6.783***	6.297***
Standard Error	(0.514)	(0.897)	(1.198)	(0.276)
T-test	12.050	7.090	5.662	22.846
Probability Value	0.000	0.000	0.000	0.000
Panel B: Diagnostic Test				
Adjusted R ²	0.315	0.317	0.305	0.305
F-test	61.303(0.00)	-	56.812(0.00)	-
Wald Test	-	64.904(0.00)	-	56.812(0.00)
Hausman Test	-	-	0.73(0.867)	-
Bresuch-Pagan RE Test	-	624.02(0.00)	-	-
Heteroscedasticity Test	-	-	22.245(0.00)	-
Pesaran CSID	-	-	-1.493(0.14)	-
Serial Correlation Test	-	-	24.287(0.00)	-
Observations	390	390	390	390

Notes: The results are reported in Table 1. The impacts of aspects of environmental disclosure practices on the total value-added growth of listed manufacturing businesses in Nigeria were examined using pooled OLS, fixed effects, random effects, and feasible GLS regression. Total Value Added Growth

(TVAG) is the quantity that is being measured. Environmental Financial Information (EFI), Environmental Non-financial Information (ENFI), and Environmental Performance Information (EPI) are the factors that explain the relationship. Within the brackets, you may get the standard error value. The following levels of significance are used: * at 10%, ** at 5%, and *** at 1%. Source: Researcher's Computation (2024)

5.2. Regression Results Interpretation

TVAG_{it}

6.358 + 0.104EFI_{it}

+ 0.202ENFI_{it}

+ 0.051EPI_{it}

T-Test = 7.090 4.952 0.531 0.064

The results the regression analysis in table 2 indicated that listed Nigerian manufacturing business's total value-added growth will increase by 0.104 percent, 0.202 percent, and 0.051 percent for every unit increase in environmental financial information, environmental non-financial information, and environmental performance information, respectively, according to the nature of the assumptions made for the regression analysis's coefficients. The total value-added growth of listed manufacturing businesses in Nigeria is positively and significantly impacted by environmental financial information (EFI= 0.104, t-test= 4.952, $p < 0.05$), according to the evidence. What this means is that listed Nigerian manufacturing businesses' overall value-added growth is heavily impacted by environmental financial information. However, the total value-added growth of listed manufacturing companies in Nigeria is not significantly affected by environmental non-financial information (ENFI= 0.202, t-test= 0.531, $p > 0.05$) or environmental performance information (EPI = 0.051, t-test= 0.064, $p > 0.05$). This further suggests that listed Nigerian manufacturing businesses' environmental performance data and environmental non-financial information do not have a substantial role in driving changes in their overall value-added growth.

The model's statistical significance at 64.904 with a p-value less than 0.05 indicates that, on the whole, the null hypothesis that the dimensions of environmental disclosure practices do not significantly impact the total value-added growth of listed manufacturing companies in Nigeria was rejected. As a result, we accept the alternative hypothesis that there is a substantial relationship between the dimensions of environmental disclosure procedures and the overall value-added growth of listed manufacturing businesses in Nigeria. The findings demonstrate that listed manufacturing businesses in Nigeria may accelerate their overall value-added development by including environmental financial, non-financial, and performance information.

5.3. Discussion of Findings

Table 2's results corroborated those of Kassem et al. (2016), who found that environmental disclosure procedures boost overall value added growth. Therefore the findings of this study suggest that manufacturing companies' worth would rise if they work to lessen the environmental effect of their operations. Table 2's results are at odds with those of the research by Oyedokun et al. (2019), Nurkumalasari et al. (2019), Wang (2015), and Van Staden (2000) who found that environmental disclosure procedures do not boost overall value-added growth. Their findings are contrary to the findings of this study; however, the implication of the findings of this study to the manufacturing companies in Nigeria is that the manufacturing companies that want to see their value grow must engage in environmentally friendly business activities.

This study's results are consistent with those of Sekerez (2017) and Bedenik and Barišić (2019) who found that the organizations' value and long term sustainability have increased over the long run for companies whose operations aim to reduce negative effects on environment. The findings of this study

indicated that Nigerian manufacturing companies that want to enhance their value and long term sustainability must be intentional in engaging in business activities that protect the environment and not the ones that would harm the environment in which they are performing their business activities. The findings of this study are in line with those of Iqbal et al. (2013) who found that organizational value rises in response to good environmental information and falls in response to bad environmental information. According the findings of this study, the manufacturing companies in Nigeria that want to add to their value must send positive environmental information. The findings of this study agree with those of Zein et al. (2020) and Zhongfu et al. (2011) who found that engaging in environmental information disclosure has a favourable and considerable influence on the value of business organisation. The Nigerian manufacturing companies that want to increase their value must engage in environmental information disclosure.

It is expected that the three dimensions of environmental disclosure practices will have positive and significant effect on total value-added growth of the listed manufacturing companies in Nigeria. Contrary to the expectation, environmental non-financial information and environmental performance information do not have significant impact in enhancing the total value-added of the manufacturing companies in Nigeria. These unexpected results may be due to the fact that in most developing nations, Nigeria inclusive; environmental reporting is still in its early stages. Companies are often hesitant to disclose how their operations affect the environment, and even when they do, the reports are often lacking in detail. These unexpected results could be attributable, in part, to the fact that the different audiences for annual reports tend to focus on financial data rather than non-financial or performance-related data.

The findings of this study have implication for the two theories used in this study. The findings corroborate the assumptions of both stakeholder theory and signalling theory. This implies that the Nigerian manufacturing companies that intend to see significant growth in their total value-added must take into consideration the interest of all the stakeholders during the decision making process. The Nigerian manufacturing companies must also send positive environmental information to their various stakeholders if they wish to grow their total value-added.

The findings of this study also have implication for practice. These results suggest that listed Nigerian manufacturing company management that want to increase their firms' worth should do their part to protect the environment. Listed manufacturing businesses in Nigeria would boost their value and maintain their long-term sustainability by engaging in environmental disclosure procedures.

6. Conclusion

This study investigated the impact of environmental disclosure practices dimensions on total value-added growth of Nigerian listed manufacturing companies. Our findings reveal that environmental financial information significantly and positively affects total value-added growth, while environmental non-financial and performance information show positive but non-significant effects. These results underscore the importance of comprehensive environmental disclosure, particularly financial information, in driving value creation for manufacturing firms in Nigeria.

Our study contributes to the literature by providing empirical evidence on the link between environmental disclosure and value creation in an emerging market context. For practitioners, our findings suggest that investing in environmental disclosure practices, especially financial information, can enhance firm value.

Future research should explore these relationships in other industries and countries, and investigate the mechanisms through which environmental disclosure impact value creation. Additionally, longitudinal studies could provide insights into how these relationships evolve over time.

In conclusion, as environmental concerns become increasingly prominent, Nigerian manufacturing firms should view environmental disclosure not just as a regulatory requirement, but as a strategic tool for value creation and sustainable growth.

7. Limitations of the Study

Environmental disclosure practices aspects' effects on listed Nigerian manufacturing businesses' total value added growth were the subject of this research. The manufacturing industry isn't the only one whose operations have an adverse effect on the natural world. There are further entities whose commercial operations are harming the natural world. However, due to the high degree of environmental effect caused by manufacturing sector business operations, this sector was selected for the research. This research has contributed to the literature on environmental disclosure procedures and total value added growth, notwithstanding this limitation.

The research also has the problem of not having data for all of Nigeria's listed manufacturing enterprises. During the course of this research, information was accessible for 39 out of 49 listed Nigerian manufacturing enterprises. About 80% of Nigeria's publicly traded manufacturing enterprises fall into that category. The study's inclusion of a large enough sample of publicly traded Nigerian manufacturing enterprises more than makes up for the exclusion of data-poor companies.

The reliability and validity of results of study heavily depend on measurement of variables used in the study. Due to the importance of sustainable environment to the survival, growth, and long term sustainability of business organisations, it is suggested that future study may consider a study that would focus on approaches for measuring environmental disclosure practices dimensions. Given the relevance of sustainable environment to total value-added growth, future study should capture more industries such as mining and telecommunication sectors.

References

- Adegbe, F. F., Ogidan, A. A., Siyanbola, T. T., & Adebayo, A. S. (2020). Environmental accounting practices and share value of food and beverages manufacturing companies quoted in Nigeria. *Journal of Critical Reviews*, 7(13), 2256-2264. <https://doi.org/10.9734/ajeba/2022/v22i23886>
- Akpan, D. C., & Nkanta, U. O. (2023). Green accounting practices and shareholders' value of listed consumer goods companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 11(6), 1-23.
- Bedenik, N. O., & Barišić, P. (2019). Non-financial reporting: Theoretical and empirical evidence. <https://www.intechopen.com/books/sustainable-management-practices/nonfinancial-reporting-theoretical-and-empirical-evidence>
- Boaventura, J. M. G., Bosse, D. A., de Mascena, K. M. C., & Sarturi, G. (2020). Value distribution to stakeholders: The influence of stakeholder power and strategic importance in public firms. *Long Range Planning*, 53(2) 1-18. <https://doi.org/10.1016/j.lrp.2019.05.003>
- Chukwu, G. J., Idamoyibo, H. R., & Akunna, M. M. (2020). Environmental liability provisions and earnings persistence of oil and gas firms in Nigeria. *Asian Journal of Economics, Business and Accounting*, 16(1), 29-40. <https://doi.org/10.9734/ajeba/2020/v16i130229>
- Cole, A. A., Aroyewun, B. O., Soetan, T. A., & Akintola, A. F. (2021). Value Added Tax and Economic Growth in Nigeria 2004-2018. *American Journal of Multidisciplinary Research & Development (AJMRD)*, 3(12), 09-13.
- Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management*, 37(1), 39-67. <https://doi.org/10.1177/0149206310388419>

- Corporate Finance Institute. (2019). Value added. <https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-value-added/>.
- Daferighe, E. E., Akpanuko, E. E., & Offiong, P. E. (2019). Social accounting practices and profitability of companies in Nigeria. *Archives of Business Research*, 7(5), 233-246. <https://doi.org/10.14738/abr.75.6554>
- Fatai Abiodun, A., Florence, O., & Helen F, O. (2021). Sustainability reporting and firm value: Evidence from selected deposit money banks in Nigeria. *Global journal of accounting*, 7(1), 47-68.
- Francis, A. (2017). Value added – concept, definition and uses. <https://www.mbaknol.com/financial-management/value-added/>
- Freeman, R. E. (2004). The stakeholder approach revisited. (*ZFWU*) – *Journal for Business, Economics & Ethics*, 5(3), 228-241. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-347076>
- Freeman, R. E., Phillips, R., & Sisodia, R. (2018). Tensions in stakeholder theory. *Business & Society*, 59(2), 1-19. <https://doi.org/10.1177/0007650318773750>
- Friedman, A. L., & Miles, S. (2002). Developing stakeholder theory. *Journal of Management Studies*, 39(1), 1-21. <https://doi.org/10.1111/1467-6486.00280>
- Giuffre, M. (1997). Designing research: Ex post facto designs. *Journal of PeriAnesthesia Nursing*, 12(3), 191-195. [https://doi.org/10.1016/S1089-9472\(97\)80038-X](https://doi.org/10.1016/S1089-9472(97)80038-X)
- Gray R. (2006). Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation? *Accounting, Auditing & Accountability Journal*, 19(6), 739-819. <https://doi.org/10.1108/09513570610709872>
- Harrison, J. S., Freeman, R. E., & Abreu, M. C. S. (2015). Stakeholder theory as an ethical approach to effective management: Applying the theory to multiple contexts. *Review of Business Management* 17(55), 858-869. <https://doi.org/10.7819/rbgn.v17i55.2647>
- Ianniello, G. (2010). The voluntary disclosure of the value added statement in annual reports of Italian listed companies. *Agric. Econ.-Czech*, 56(8), 638-378. <https://doi.org/10.17221/65/2010-AGRICECON>
- Iredele, O. O. (2020). Measuring performance in corporate environmental reporting in Nigeria. *Measuring Business Excellence*, 24(2), 183-195. <https://doi.org/10.1108/MBE-05-2019-0040>
- Iredele, O. O., & Okpala, O. P. (2018). Corporate social and environmental disclosures and market value of listed firms in Nigeria. *Copernican Journal of Finance & Accounting*, 7(3), 9-28. <https://doi.org/10.12775/CJFA.2018.013>
- Iqbal, M., Sutrisno, T., Assih, P., & Rosidi, B. (2013). Effect of environmental accounting implementation and environmental performance and environmental information disclosure as mediation on company value. *International Journal of Business and Management Invention*, 2(10), 55-67.
- Islam, F. (2019). The voluntary disclosure of value added statement in financial reporting: A study on listed companies of Bangladesh. https://www.researchgate.net/publication/330497717_The_voluntary_Disclosure_of_Value_Added_Statement_in_Financial_Reporting-A_Study_on_listed_Companies_of_Bangladesh
- Kassem, E., Trenz, O., Hrebicek, J., & Faldik, O. (2016). Sustainability assessment using sustainable value added. *Procedia – Social and Behavioral Sciences*, 220, 177-183. <https://doi.org/10.1016/j.sbspro.2016.05.482>
- Kenton, W. (2019). Value added. <https://www.investopedia.com/terms/v/valueadded.asp>.

- Langrafe, T. F., Barakat, S. R., Stocker, S., & Boaventura, J. M. G. (2020). A stakeholder theory approach to creating value in higher education institutions. *The Bottom Line*, 33(4), 297- 313. <https://doi.org/10.1108/BL-03-2020-0021>
- Levy, H., & Lazarovich-Porat, E. (1995). Signaling theory and risk perception: An experimental study. *Journal of Economics and Business*, 47(1), 39-56. [https://doi.org/10.1016/0148-6195\(94\)00022-6](https://doi.org/10.1016/0148-6195(94)00022-6)
- Mohamed, E. B., Garoui, N., & Sweiti, I. (2020). On the determinants of environmental information disclosure: Evidences from Industrial Saudi listed firms. *Agrociencia*, 54(1), 61-77. <https://ssrn.com/abstract=3667320>
- 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. <http://link.springer.com/10.1186/s41180-019-0027-5>
- Niesten, E., & Jolink, A. (2020). Motivations for environmental alliances: Generating and internalising environmental and knowledge value. *International Journal of Management Reviews*, 22, 356-377. <https://doi.org/10.1111/ijmr.12228>
- Ofoegbu, N. G., & Odoemelan, N. (2018). International financial reporting standards (IFRS) disclosure and performance of Nigeria listed companies. *Cogent Business & Management*, 5, 1-18. <https://doi.org/10.1080/23311975.2018.1542967>
- Ogunode, O., & Adegbe, F. (2020). Effect of environmental fairness on assets utilisation in the Nigerian oil and gas companies: An empirical analysis. *Journal of Finance and Accounting*, 8(5), 236-243. <https://doi.org/10.11648/j.jfa.20200805.14>
- Olasupo, S. F., & Akinselure, O. P. (2017). Impact of environment accounting on financial performance of selected quoted companies. *International Research Journal of Management and Commerce*, 4(11), 337-348.
- Oncioiu, I., Petrescu, A. G., Bilcan, F. R., Petrescu, M., Popescu, D. M., & Anghel, E. (2020). Corporate sustainability reporting and financial performance. *Sustainability*, 12, 1-13. <https://doi.org/10.3390/su12104297>
- Onoh, U. A., Biradawa, K., & Ndubuisi, O. C. (2022). Sustainability reporting and firm value of listed oil and gas companies in Nigeria. *Indian Journal of Applied Business and Economic Research*, 3(2), 277-322.
- Orshi, T. S., Barde, I. M., & Muhammas, M. L. (2022). Environmental Sustainability Disclosure and Value of Listed Manufacturing Firms in Nigeria: The Moderating Effect of Ownership Structure. *NDA Journal of Management Sciences Research*, 2(1), 12-25.
- Oyedokun, G. E., Egberi, O. E., & Tonade, M. A. (2019). Environmental accounting disclosure and firm value of industrial goods companies in Nigeria. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 10(1), 7-27. <https://doi.org/10.9790/5933-1001030727>
- Nurkumalasari, I. S., Restuningdiah, N., & Sidharta, E. A. (2019). Integrated reporting disclosure and its impact on firm value: Evidence in Asia. *International Journal of Business, Economics and Law*, 18(5), 99-109.
- Sekerez, V. (2017). Environmental accounting as a cornerstone of corporate sustainability reporting. *International Journal of Management Science and Business Administration*, 4(1), 7-14. <https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.41.1001>

- Simoni, L., Bini, L., & Bellucci, M. (2020). Effects of social, environmental, and institutional factors on sustainability report assurance: Evidence from European countries. *Meditari Accountancy Research*, 28(6), 1-29. <http://creativecommons.org/licences/by/4.0/legalcode>
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355-374. <https://doi.org/10.2307/1882010>
- Setyahuni, S. W., & Handayani, S. (2020). On the value relevance of information on environmental, social, and governance (ESG): An evidence from Indonesia. *Journal of Critical Reviews*, 7(12), 50-58. [https:// DOI: http://dx.doi.org/10.31838/jcr.07.12.09](https://doi.org/10.31838/jcr.07.12.09)
- Syder, I. D., Ogbonna, G. N., & Akani, F. N. (2020). The effect of sustainability accounting report on shareholder value of quoted oil and gas companies in Nigeria. *International Journal of Management Sciences*, 7(5), 44-57.
- Tarus, J. K. (2020). Do board size and firm size affect environmental accounting disclosure? Evidence from selected listed firms in Kenya. *Journal of Business Management and Economic Research*, 4(1), 21-37. [https://doi: 10.29226/TR1001.2019.181](https://doi.org/10.29226/TR1001.2019.181)
- Ukoh, U. M., Nduokafor, C. O., & Nworie, G. O. (2024). Sustainability Reporting among oil and gas firms: A Strategic Tool for Enhanced Firm Value. *International Journal of Economics and Financial Management*, 9(2), 144-166
- Utomo, M. N., Rahayu, S., Kaujan, K., & Irwandi, S. A. (2020). Environmental performance, environmental disclosure, and firm value: Empirical study of non-financial companies at Indonesia Stock Exchange. *Green Finance*, 2(1), 100-113. [https://doi:10.3934/GF.2020006](https://doi.org/10.3934/GF.2020006)
- Van Staden, C. J. (2000). The value added statement: Bastion of social reporting or dinosaur of financial reporting. <https://mro.massey.ac.nz/bitstream/handle/10179/2543/200.pdf>.
- Wang, M. C. (2015). The relationship between environmental information disclosure and firm valuation: The role of corporate governance. *Quality and Quantity*, 50(3), 1-17. [https://doi:10.1007/s11135-015-0194-0](https://doi.org/10.1007/s11135-015-0194-0)
- Wahyuningrum, I. F. S., & Budihardjo, M. A. (2018). Relationship between company financial performance, characteristic and environmental disclosure of ASX listed companies. *E3S Web of Conferences*, 73(9), 1-5. [https://doi:10.1051/e3sconf/20187310024](https://doi.org/10.1051/e3sconf/20187310024)
- Yin, H., Li, M., Ma, Y., & Zhang, Q. (2019). The relationship between environmental information disclosure and profitability: A comparison between different disclosure styles. *International Journal of Environmental Research and Public Health*, 16(9), 1-14. [https://doi:10.3390/ijerph16091556](https://doi.org/10.3390/ijerph16091556)
- Zein, S. A. E., Consolacion-Sergura, C., & Huertas-Garcia, R. (2020). The role of sustainability in brand equity value in the financial sector. *Sustainability*, 12(1), 1-19. [https://doi:10.3390/su12010254](https://doi.org/10.3390/su12010254)
- Zhongfu, Y., Jianhui, J., & Pinglin, H. (2011). The study of correlation between environmental information disclosure and economic performance—With empirical data from the manufacturing industries at Shanghai Stock Exchange in China. *Energy Procedia*, 5, 1218-1224. [https://doi:10.1016/j.egypro.2011.03.213](https://doi.org/10.1016/j.egypro.2011.03.213)